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HOSPITAL DIETS AND THEIR RELATION TO THE TREATMENT OF CERTAIN DISEASES*

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EVERY institution has its own distinctive problems, not common to many or any but to each, and all the problems of food and feeding are burning questions to-day. There is more to the subject than to supply food at a minimum of labour, cost and material, which should yield maximum results in normally satisfied, well fed and happy communities.

The tremendous wave of progress and searching for truth in all the sciences during the past decade, has directed the same forces toward the questions relating to metabolism, and the science of feeding has taken on a distinct and certainly a new departure, which Professor von Noorden calls "the new science of nutrition".

The old methods and general arrangement of hospital diets have undergone very definite changes. Diet lists are gradually passing from bulletin boards of the most conservative hospitals, while all inclusive diet lists have disappeared entirely. In the recent annual reports of many hospitals one reads: "Noticeable changes have been made in the system of diets;" "Special patients are carefully treated according to metabolism requirements;" and in another, "That since it has become necessary through the changed methods of feeding patients, four nurses are annually taught to prepare and calculate diets and to take care of the metabolism work."

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The opening sentences of an address before the Boston Medical Association by Dr. Eugène Dubois indicate the spread of the new movement and a call to action.

"In these days, when housewives speak in terms of calories and the newspapers deal with vitamines, it may be well for clinicians to examine once more the fundamental principles of nutrition. Patients no longer demand medicines, they do expect diets, and if they are at all up with the magazine literature, they are better informed on the subject than the text-books which most of us studied in the medical schools."

There came into existence some fourteen years ago, a new profession for the trained woman—the hospital-dietitian. Although her acceptance into the official body of the hospital did not occur until she had proved her value on the credit side of the ledger, her ready response to the scientific demands made by the larger hospitals and her ability to coöperate with the physicians, have already made her a recognized factor, necessary for detailed work and to serve as the connecting link between the doctor and patient on the one hand, and an intelligent handling of food problems on the other.

What are the requirements for a dietitian? is an ever recurring question. The answer is, that an applicant should have a college degree, B.Sc. or the equivalent, somewhat more than the fundamentals of the sciences,—physics, both chemistries, organic and inorganic, with special emphasis on physiological chemistry, biology and bacteriology, and in addition a technical training in domestic science. Several branches of the medical curriculum are also necessary, certainly a knowledge of diseases, in order to be able to accept a diagnosis, calculate and prepare a diet suitable to the case and to follow the laboratory readings and findings.

She should enter upon the work with an up-to-date knowledge of diets in health and disease, otherwise it will be impossible to carry all the routine duties and to have to make-up as well as keep-up with the advances constantly presented. Apart from the necessary training, the dietitian should possess certain inherent qualifications which fit her specially for the work. She should have initiative, adaptability, tact, unbounded enthusiasm and personal force to make *it go*, so to speak. She must have the ability to coöperate with every other department, for all are essential to ensure success in the work.

As energy and the time are limited, and it is a physical impossibility for the busy physician to attend personally to details, he

has gradually come to write out prescriptions to the "hydro," the psychologist, and the masseur as well as to the pharmacist, and to-day, with equal formality, he writes one for the dietitian giving date, ward, name, diagnosis, number of feedings, calories, with the amounts of protein, fats, carbohydrates, and salts in grams, total fluids when necessary. These prescriptions are sent to the dietitian who sees that they are accurately calculated, made up into menus and promptly delivered. This all entails an enormous amount of reliable work and presupposes a broad knowledge of the composition of food materials, and their suitability in diseases, digestibility and end-products. Thus:

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DIET

Ward..... Date.....
Name.....
Diagnosis.....
Feedings.....
Calories.....
℞

Protein.....grms.
Fats.....grms.
Carbo-hyd.....grms.
Salts.....grms.
Total Fluids.....c.c.

Signed.....
Physician

If we correctly read the signs of the times and wish to keep in step with the progress in metabolism, it is obvious that each new discovery broadens the field of dietetics, and Dr. Dubois states that:

"The science of nutrition in disease must be founded upon experiments in calorimetry and the respiratory metabolism. The word metabolism indicates the transformation of matter and refers to the breaking down of foods, to their absorption and to the building up of body tissues. The term also refers to the oxidation of foodstuffs and of body tissues, with the consequent warmth and energy."

It seems obvious, therefore, that these advances should be adapted to the needs of patients, whether they be within hospital walls or in private homes. Dr. Richard Cabot asserts the very poor and the very rich get the best medical attention, "the poor who ask aid at a great public hospital, receive up-to-date, scientific, thorough diagnostic treatment for nothing. The *very rich* are served *very nearly* as well as the poor, though at a great expenditure of time and money, and both get better treatment than the vast

majority of our fellow beings who are neither very rich nor very poor and who have to call in the family doctor when there is illness."

The results of the various laboratories doing metabolism work are equally as dependent upon correct calculations and proper selection of food, as upon the correct readings in any other division of the experiments. The definite composition of the intake is as essential as the results of the outgo. In estimating the alveolar air and respiratory quotient, the quantitative and qualitative analysis of urine and blood or determination of fecal matter, all must be based upon a clear comprehension of the food consumed, of the changes which this food has undergone during its preparation, as well as the factors which enter into its palatability suitability, psychic effect and what may be expected from the splitting-up processes of the alimentary tract.

In developing a dietary system for the new Peter Bent Brigham Hospital the effort was to steer as far from the old known ruts as possible, and so to simplify the general diets that all patients might receive a more liberal allowance than is usual and to do away with the work and strain of the average diet kitchen which has been so greatly abused. According to the report of some recent investigations made by Dr. Elliot P. Joslin, who states:

"That in one hospital visited, 90 per cent. of the food for private patients was prepared by the dietitian and nurses."

The list from that particular hospital seems unbelievable and is as follows:

"Two kinds of broth,
Ten varieties of preparation of meat and fish,
Twenty-two vegetables,
One gruel,
Twenty-one kinds or preparations of fruit,
Eighteen varieties of salad and
Twelve varieties of desserts."

Such a useless waste of energy would not be tolerated in any of the large caravanseries.

The general diet so arranged has resulted in greater satisfaction for all patients without additional expense to the institution. There is the usual grouping of patients for soft and liquid diets, without lists or inclusive amounts, but all per doctor's orders. Feeding up does not mean a few more eggs or several glasses of milk, nor feeding down a reduction of bulk, but intelligent elimination.

Whenever a hospital has been attached to a research labora-

tory some method was required for the weighing and calculation of the food, available for that series of experiments. At the Peter Bent Brigham Hospital the work was begun the other way around. Every patient with doubtful metabolism becomes not the experiment, but a case for treatment, by the results of experiments, that is, these cases are fed upon the basis of intake and output equilibrium of each particular patient with reference to the character of the disease, greater or less severity, and complications.

A diet laboratory was installed under the supervision of the dietitian, the work done by an assistant dietitian and two nurses. The latter are there for six weeks, as a part of the dietetic course, after lectures and lessons. Here the food, according to prescription, selection, calculation and menus, is prepared. It is then placed in small selected containers, one for each patient, packed in either heated tin boxes or in ice, as the case may be, and delivered by a special messenger to the ward, passing on directly to the nurse in charge, who as carefully unpacks and serves. Any left-over is weighed and calculated by the junior intern on duty in the ward laboratory. In the large general laboratories quantitative analyses are made of the urine, feces and blood. There are also laboratories specially arranged and having the necessary apparatus for the determination of the alveolar air and the respiratory quotient as required in all metabolism work.

The diets have been chiefly concerned with typhoid fever, diabetes and in establishing certain functional tests in renal cases.

In the surgical wards special attention has been given to thyroid cases and acute glycosuria. Excellent results have also been secured after gastrostomy operations. The patients have gained in weight, which is unusual, and have been able to leave the hospital in good condition. The average calories and character of such fluid feeding is as follows.

STOMACH FEEDING BY TUBE

Food	Amount	Calories
Peptonized Milk	1000 c.c.	692.
Barley Water	300 c.c.	
Lime Water	50 c.c.	
Lactose	200 grms.	800
Cream (40 per cent.)	400 c.c.	778
4 Eggs (diluted with H_2O)	200 c.c.	296.2
Russian Oil	30 c.c.	
2 Lemon Juice	60 c.c.	31.36
Total	....	2607.56

The lactose is made into a saturated solution (200 grms. to 1000 c.c. of water) heated until dissolved, and kept for use at a temperature of 76° Farh. The peptonized milk, cream, barley water and lime water are blended together and given, alternating with the mixture of lactose, water, egg, and lemon juice. The milk preparation is made in bulk and used as needed, the egg mixture is mixed for each feeding.

Typhoid Fever

Typhoid fever has only been recognized as a distinct disease since 1837, when Gerhard and Pennock differentiated it from typhus fever. Emaciation was considered a characteristic symptom. Early in the history of the study, exact observations were made on the loss of weight and abnormal amount of nitrogen in the urine, but as no record of the food was made, the weight-curves were of little value, without a knowledge of the intake, nor could an equilibrium be established. The diet was practically starvation. We know of Graves' diet which yielded about 300 calories per day. Then the liberal milk diet, when the patient was uncomfortable on a quantity which gave about 1300 calories. Next the varied diet with which Dr. Shattuck's name is so prominently connected, with the many others, when milk, plus eggs and light cereals, or milk, plus eggs, crackers, scraped meats, etc. were given. To-day Dr. Warren Coleman's "High Calory Diet" is generally used, which calculates about 40 calories per kilo of body weight, that is to feed from 3000 to 4000 calories daily. Dr. Coleman asserts, however, "that the outside requirements must vary for the individual case," and "no patient should be given more food than he is capable of digesting and absorbing." "The best results are obtained by sparing the body proteins" and by giving a diet rich in fats and carbohydrates. In order to meet the heat needs of the patients, the sugars must be used in quite large amounts. Lactose, glucose and cane sugar are generally given. They vary according to the idiocyncrasies of the patients. At the Peter Bent Brigham Hospital the diet practically as outlined by Dr. Coleman is used, with some slight modifications and several new dishes calculated and added to the list to vary the monotony, and it is as follows:

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High Calory Typhoid Diet

	Amount	Calories	
7 A.M.			
Egg	50 grms.	74·05	
Toast	20 grms.	52·18	(without crust).
Butter	20 grms.	153·8	
Lactose	10 grms.	40·	
Sucrose	8 grms.	32·	(for each cup.)
Cream	50 c.c.	190·4	
Coffee	70 c.c.	0·	
9 A.M.			
*Milk	150 c.c.	103·8	
Cream	50 c.c.	190·4	Milk preparation 200 c.c.
Lactose	10 grms.	40·	
11 A.M.			
Potato	50 grms.	55·81	
Custard	120 grms.	170·	
†Minced Cream Chicken	135 grms.	382·95	
Bread	20 grms.	52·18	
Butter	20 grms.	153·8	
Lactose	10 grms.	40·	
Sucrose	8 grms.	32	
Tea	70 c.c.	0·	
Cream	50 c.c.	190·4	
1 P.M.			
Lemon Juice (flavour)	25 c.c.	9·8	
Lactose sol. 20 per cent	175 c.c.	35·	Lactose Lemonade 200 c.c.
Sucrose	10 grms.	40·0	
3 P.M.			
Cream	100 c.c.	380·8	
Milk	100 c.c.	69·2	
Ice Cream			
Egg (1)	50 grms.	74·05	Ice Cream 290 c.c.
Lactose	20 grms.	80·	
Sucrose	20 grms.	80·	
5 P.M.			
Cream of Wheat	60 grms.	32·574	
Cream	40 c.c.	152·32	
Milk (if necessary)	40 c.c.	27·68	
Lactose	10 grms.	40·	
Apple Sauce	110 grms.	102·9	
Lactose	10 grms.	40·	
Sucrose	8 grms.	32·	
Tea	70 c.c.	0·	
Cream	50 c.c.	190·4	
Milk	65 c.c.	44·98	
Cream	50 c.c.	190·4	
Cocoa	5 grms.	24·865	Hot Cocoa (instead of tea or coffee.)
Lactose	10 grms.	40·	
Sucrose	8 grms.	32·	

*The lactose is first made into a saturated solution before its use in lemonade or fruit beverages. When used with milk it is also heated to dissolve and so avoid the gritty and unpleasant taste.

† Or a substitute dish.

HIGH CALORY TYPHOID DIET

	Amount	Calories	
9 P.M.			
Milk	150 c.c.	103·8	Milk preparation 200 c.c.
Cream	50 c.c.	190·4	
Lactose	10 grms.	40·	
11 P.M.			
Milk	145 c.c.	100·34	
Cream	50 c.c.	190·4	Cocoa preparation 200 c.c.
Lactose	10 grms.	40·	
Cocoa	5 grms.	24·865	
5 A.M.			
Milk	65 c.c.	44·98	
Cream	70 c.c.	266·56	
Cocoa	5 grms.	24·865	Hot Cocoa 120 c.c.
Lactose	10 grms.	40·000	
Sucrose	8 grms.	32·000	

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DISHES AS USED IN HIGH CALORY DIETS

HIGH CALORY TYPHOID DIET

	Amount	Calories	
Milk	50 c.c.	34·6	
Cream	50 c.c.	190·4	
Egg	50 grms.	74·05	
Cornstarch	5 grms.	18·	Blanc Mange 165 grms.
Lactose	5 grms.	20·	
Sucrose	5 grms.	20·	
Milk	50 c.c.	34·6	
1 Egg	50 grms.	74·05	Bread Omelet Souffle 130
Bread	20 grms.	52·18	grms.
Butter	10 grms.	76·9	
Scraped Beef	75 grms.	134·25	
Bread	30 grms.	78·27	Scraped Beef on Toast 115
Butter	10 grms.	76·9	grms.
Lamb	50 grms.	96·55	
1 Egg	50 grms.	74·05	
Butter	10 grms.	76·9	Scalloped Lamb 130 grms.
Bread Crumbs	10 grms.	26·09	
Cream	10 c.c.	38·08	
Chicken	75 grms.	115·65	
Cream	50 c.c.	190·4	Creamed Chicken 135
Butter	10 grms.	76·9	grms.

Graffe practically confirms the results of Coleman that diets containing from 10–15 grams nitrogen may be considered the outside protein requirement. Although tissue protein can not be built up from gelatin, because, though gelatin contains many of

the structural units of meat protein, but in different relative amounts, it does not contain tyrosin, cystin or tryptophan, which are chemical units necessary to repair the worn out cell machinery. Murlin has shown, however, that one third of the daily protein ration may be replaced by gelatin, provided the carbohydrate supply is sufficient. It therefore proves an excellent medium for the carrying of various carbohydrate foods in the form of simple desserts and similar dishes.

The choice of the protein food lies among the meats, eggs, and milk. There are many objections to meats offered, the strongest being that they vary in digestibility according to the variety of the cut and the method of cooking, and that they provoke intestinal disturbances. If meat be used it should be scraped, ground or powdered, the latter may also be peptonized, and faulty mastication may be avoided in this way, especially if the patient is in a stupor. Care must be taken that putrefactive disturbances do not take place in the intestines, or in any way place extra work upon the kidneys.

Nephritis

The statement one hears that more men die from overeating than overdrinking refers, if true, to the kidneys no less than to the liver. Most articles in analysis prove to contain one or more of a long list of substances not easily excreted. Foods do not behave the same for all people in normal health, and it must be anticipated that they act in unexpected and certainly peculiar ways when given in disease, even in stages of disease; "different meals affect metabolism in different ways" and further "that the amino-acids are not all alike." Dr. Van Nooden's simple regulations for diets in kidney diseases should receive more attention, that is "to save the diseased organ all superfluous work. (2) To eliminate all irritants from the diet which would stimulate it to increased effort. (3) To select such diets, the end-products of which are readily excreted from diseased kidneys, from those which are not, and in this way the organ is protected from an accumulation of products more or less toxic." In many cases of fever, in infections, or intoxications, if more care be given to the food in relation to the kidneys, the point of irritation, which causes the final breakdown, might be prevented. Urea, creatin, hippuric acid and the phosphates are hard upon the kidneys and there should be a definite control for all protein intake. Green vegetables, fruits with kernels and cranberries contain large amounts of benzoic acid, which is

synthetized to hippuric acid. Apples, pears, grapes and raspberries contain very little. Von Noorden uses calcium carbonate with milk, which causes the excretion of much of the phosphoric acid by way of the alimentary tract. Condiments should be omitted as they are irritants.

Within the last three years a number of studies have been made of nephritis by the medical clinic of the Peter Bent Brigham Hospital and practically form a series of systematic investigations. The majority of these studies have been published from time to time by each member of the staff, of that part of the study, with which he was distinctly concerned. The names of Drs. Christian, Frothingham, Jr., Smillie, Fitz, Dawson, O'Hare and others associated with the hospital, are represented in these publications.

Five determinations are used as tests in chronic nephritis: (1) The finding of albumin and casts; (2) The rise in blood pressure; (3) The phenolsulphonephthalein test; (4) The total blood nitrogen; (5) The ability of the kidney to secrete added salt and urea on a fixed diet. The fifth and last test, called for several carefully selected and calculated diets, which resulted in the standardizing of three nephritic diets with varying amounts of protein and known as high protein, standard, and low protein. These diets are ordered after diagnosis, as indicated.

SAMPLE DIET

Test Nephritic			High Protein Diet		
Food	Amount	Protein	Fat	Carbohydrate	Calories
Apple	50 grms.	·20	·25	7·10	31·45
Dates	10 grms.	·21	·28	7·84	34·72
Milk	400 c.c.	13·20	16·00	20·00	276·80
Cream	40 c.c.	·88	16·00	1·20	152·32
Butter	30 grms.	·30	25·50	.....	230·70
5 Eggs	250 grms.	33·50	26·25	.....	370·25
Steak (tenderloin)	200 grms.	47·00	40·80	.....	555·20
Chicken	100 grms.	21·90	7·40	.....	154·20
Cheese (American)	50 grms.	14·40	17·95	·15	219·75
Farina	150 grms.	2·475	·315	17·175	81·435
Potato	100 grms.	2·50	·10	20·90	94·50
Spinach	100 grms.	2·10	4·10	2·60	55·70
Tomato Juice	100 c.c.	.....	.....	.....	.....
Macaroni	100 grms.	3·00	1·50	15·80	88·70
Bread	70 grms.	6·44	·39	15·93	78·27
Cocoa	5 grms.	1·08	1·455	1·885	24·865
Cornstarch	5 grms.	.....	.....	4·50	18·00
Sugar	35 grms.	.....	.....	35·00	140·00
Sherry	20 c.c.	.....	.....	.....	.....
Total	.....	149·185	158·80	171·32	2711·22

MENU

ARRANGED FROM ABOVE CALCULATION

Breakfast 7.30 A.M.

Apple	50 grms.
Farina	150 grms.
* c Dates	10 grms.
2 Eggs in Ramequin	100 grms.
Toast	20 grms.
c Butter	5 grms.
Coffee	150 c.c.
Milk	25 c.c.
Cream	10 c.c.
Sugar	10 grms.

10 A.M.

Egg Nog	
1 Egg	50 grms.
Sugar	5 grms.
Milk	100 c.c.
Sherry	20 c.c.

Dinner 12 Noon

Tomato Bisque	
Milk	100 c.c.
Tomato Juice	100 c.c.
Broiled Steak	200 grms.
Stuffed Potato	100 grms.
c Butter	5 grms.
Bread	
c Butter	5 grms.
Cocoa Cornstarch Pudding	
Milk	100 c.c.
1 Egg	50 grms.
Sugar	10 grms.
Cornstarch	5 grms.
Cocoa	5 grms.
Tea	150 c.c.
Cream	20 c.c.
Sugar	5 grms.

3 P.M.

Grapejuice	90 c.c.
Water	90 c.c.
Crushed Ice	

Supper 5.00 P.M.

Sliced Chicken	100 grms.
Spinach	100 grms.
c 1 Hd. Cook Egg	50 grms.
Bread	20 grms.
c Butter	5 grms.

* 10 grams dates or prunes may be used to change the flavour and yield approximately 33' calories; 7'85 carbohy.

Supper 5.00 P.M.—*Continued.*

Scalloped Macaroni	100 grms.
c Bread Crumbs.	10 grms.
Cheese (American)	50 grms.
Milk	25 c.c.
Butter	10 grms.
Tea	150 c.c.
Cream	10 c.c.
Sugar	5 grms.

SALT POOR DIET

Food	Amount	Protein (grams)	Fat (grams)	Carbohyd. (grams)	Cl. (grams)	Salts (grams)	Calories
Milk	400 c.c.	13·2	16·0	20·0	.48	2·8	276·8
Butter	60 grms.	·6	51·0	....	....	....	461·4
3 Eggs	150 grms.	20·1	15·7	....	·15	1·2	221·7
Sugar	35 grms.	....	....	35·0	....	....	140·0
Bread	120 grms.	11·1	1·4	63·2	....	1·2	309·8
Cream	40 c.c.	·9	16·0	1·2	·04	·2	152·4
Orange	50 grms.	·4	·1	5·8	·005	·25	25·7
Potato	100 grms.	2·5	·1	20·9	·03	1·0	94·5
Oatmeal	200 grms.	5·6	1·0	23·0	·07	1·4	123·4
Cauliflower	100 grms.	1·8	·5	4·7	·05	·7	30·5
Tomatoes	100 grms.	1·2	·2	4·0	·03	·6	22·6
Halibut	100 grms.	18·6	5·2	....	....	1·00	121·2
Chicken	50 grms.	10·95	3·7	....	·03	·55	77·1
Peaches (canned)	100 grms.	·7	·1	10·8	·01	·3	46·9
Total		87·65	111·0	188·6	·895	11·2	2104·0

MENU

*Arranged from Above Calculation

Breakfast 7.30 A.M.

Orange	50 grms.
Oatmeal	200 grms.
2 Eggs	100 grms.
Toast	40 grms.
Coffee	150 c.c.
Cream	10 c.c.
Sugar	10 grms.
Milk	25 c.c.

10.00 A.M.

Milk	150 c.c.

Dinner 12.00 Noon

Milk soup (celery flavour)	100 c.c.
Halibut	100 grms.
Potato (stuffed)	100 grms.
Scalloped Tomatoes	100 grms.
Bread	40 grms.

* All food prepared without NaCL.

Butter. Frozen custard	
Tea	150 c.c.
Cream	20 c.c.
Sugar	5 grms.
1 Egg.	
Supper 5.00 P.M.	
Sliced Chicken	50 grms.
Cauliflower	100 grms.
Bread	40 grms.
Butter.	
Peaches	100 grms.
Tea	150 c.c.
Cream	10 c.c.
Sugar	10 grms.
Milk	25 c.c.

To try out the ability of the kidney to excrete certain factors in the average diet, Dr. Christian inaugurated a series of test renal meals for one day. The methods of von Monakow, Hedinger and Schlayer were practically followed, certain modifications were made and some changes in the food material.

The feedings were given every two hours, containing different food material, and in varying quantities. "The nitrogen was quantitated in the various portions, as well as the water and sodium chloride." The urine was collected every two hours. Two to three days of a fixation diet, were required, preceding the test. The standard nephritic diet, previously mentioned as used in another series of experiments, was given, and follows, also the test meals.

TEST

STANDARD NEPHRITIC DIET

Food	Amount	Protein	Fat	Carbohyd.	Calories
Lamb Chops	75 grms.	16·275	22·425	.....	266·925
Chicken	40 grms.	8·76	2·96	.....	61·68
2 Eggs	100 grms.	13·4	10·5	.....	148·1
Potato	100 grms.	2·5	·1	20·9	94·5
Peas	100 grms.	3·6	·2	9·8	55·4
Tomatoes (uncooked)	135 grms.	1·215	·54	5·265	30·78
Cream of Wheat	150 grms.	2·475	·315	17·175	81·435
Dates	10 grms.	·21	·28	7·89	34·72
Orange	50 grms.	·4	·1	5·8	25·7
Pineapple	100 grms.	·4	·7	36·4	153·5
Orange Juice	40 c.c.	.....	.....	4·32	17·28
Lemon Juice	10 c.c.	.....	.....	·98	3·92
Gelatin	4 grms.	3·656	·004	.....	14·66
Bread	60 grms.	5·52	·78	31·86	156·54
Butter	45 grms.	·45	38·25	.....	346·05
Sugar	50 grms.	.....	.....	50·00	200·0
Cream	60 c.c.	1·32	24·00	1·8	228·48
Milk	450 c.c.	14·85	18·0	22·5	311·4
Total		75·031	119·154	214·64	2231·07

MENU

Arranged from Above Calculation

Breakfast

Orange	50 grms.
Cream of Wheat	150 grms.
Dates	10 grms.
Poached Egg	50 grms.
Toast	20 grms.
Coffee	150 c.c.
Cream	30 c.c.
Milk	25 c.c.
Sugar	100 grms.

Midmeal

Milk	200 c.c.

Dinner

Milk Soup	100 c.c.
Lamb Chops	75 grms.
Stuffed Potato	100 grms.
Peas	100 grms.
Bread	100 grms.
Orange Jelly	
Orange Juice	40 c.c.
Lemon Juice	10 c.c.
Sugar	10 grms.
Gelatin	4 grms.
Soft Custard	
Milk	100 c.c.
Sugar	10 grms.
1 Egg	50 grms.
Tea	150 c.c.
Cream	20 c.c.
Sugar	5 grms.

Midmeal

Lemonade	150 c.c.
Sugar	5 grms.

Supper

Chicken	40 grms.
Sliced Tomatoes	135 grms.
Pineapple	100 grms.
Bread	20 grms.
Tea	150 c.c.
Cream	20 c.c.
Sugar	10 grms.
Milk	25 c.c.

TEST RENAL MEALS

Food	H20	Protein	Fat	Carbohyd	Ash	Calories	Grams	
7.30 A.M.								
Coffee	330	....	....	.....	....	....	330	
Milk	17·4	·66	·80	1·	·14	13·84	20	
Sugar	....	....	....	15·	....	60·30	15	
Toast	17·5	4·55	·80	26·65	·50	132·00	50	
Butter	1·1	·10	8·50	.....	·30	76·90	10	
10.00 A.M.								
Milk	304·50	11·550	14·0	17·5000	2·45	242·2	355	c.c.
Toast	26·25	6·825	1·2	39·975	·75	198·0	75	
Butter	1·10	·100	8·5	.....	·30	76·9	10	
12.30 P.M.								
Bouillon	338 10	7·70	·35	·70	3·15	36·75	350	c.c.
Broiled Steak	82 20	35·25	30·60	.....	1·80	416·40	150	
Butter	1·65	·15	12·75	.....	·45	115·35	15	
NaCl	....	....	....	.....	·10	....	.....	
Mashed Potato	113·25	3·75	·15	31·35	1·50	141·75	150	
Butter	1·65	·15	12·75	.....	·45	115·35	15	
NaCl	....	....	....	.....	·10	....	.....	
Toast	17·50	4·55	·80	26·56	·50	132·00	50	
Butter	1·10	·10	8·50	.....	·30	76·90	10	
Coffee	90·00	....	....	.....	....	....	90	c.c.
Milk	17·40	·66	·80	1·00	·14	13·84	20	c.c.
Sugar	....	....	....	.....	....	60·00	15	
4.00 P.M.								
Tea	330·00	....	....	.....	....	....	330	c.c.
Milk	17·40	·66	·80	1·00	·14	13·84	20	c.c.
Sugar	....	....	....	15·00	....	60·00	15	
Crackers	1·65	2·74	2·55	20·47	·59	115·79	28	
7.00 P.M.								
Soft Egg	36·60	6·6	6·00	.....	·40	80·4	50	
NaCl	....	....	....	.....	·05	....	.....	
Blanc Mange								
1 Egg	36·60	6·6	6·00	.....	·40	80·4	50	
Sugar	....	....	....	20·0	....	80·0	20	
Cornstarch	....	....	....	7·2	·80	28·8	8	
Milk	87·00	3·3	4·00	5·0	·70	72·0	1000	c.c.
Cream	29·60	1·0	7·40	1·8	·20	77·8	44	c.c.

Diabetes

Diabetes continues to be regarded as "a weakness of the internal secretion of the pancreas". The greatest changes in the treatment of diabetes have been the adoption of the "Allen method" for getting patients sugar-free, a new point of view in regard to the presence of acidosis, and the growing recognition of the possible value of a certain amount of daily exercise.

The "Allen method of starvation" was presented in a paper about two years ago by Dr. Frederick W. Allen, of the Rockefeller Institute, New York City. The principles of the starvation treat-

CHARTS*

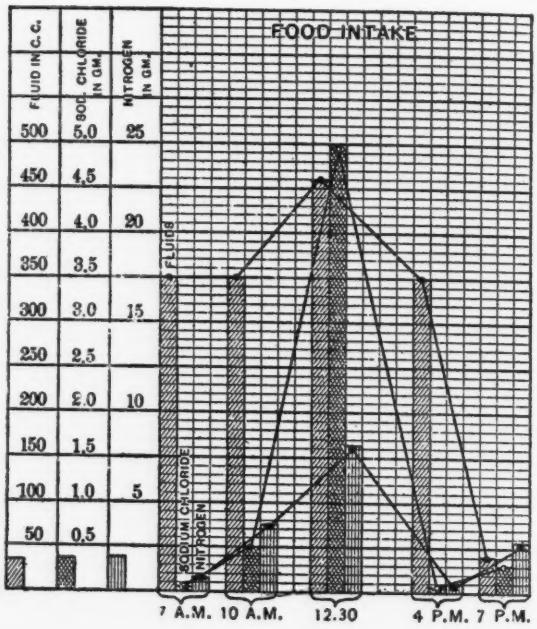

CHART I.—To show amounts of fluid, sodium chloride, and nitrogen in each meal of the renal diet. The lines connecting the tops of the columns give the curve of variation in intake of each constituent.

* By courtesy of Dr. Henry A. Christian.

ment were primarily developed by Nauneyn and followed by a few. Van Noorden made use of the fast days and vegetable days as preparation for his oatmeal days, but gradually increased the number of his fast days, calling them "Metabolic Sundays". But to Dr. Allen is due the courage to advance a systematic method and advise the treatment for all diabetics and to prove its efficacy. The treatment has reduced the time of getting patients sugar-free from five to thirty days by the old way to from one to four days by the new, which is an enormous gain to the patient, and of real financial benefit to the hospitals.

"The first step is to have the patient fast until sugar-free and then continue the fast for twenty-four to forty-eight hours longer. When the fasting patient has been through the required time, the next step is to begin feeding very cautiously. The first thing given after fasting is carbohydrate, 5 per cent. to 10 per cent., using the green vegetables in the 5 per cent. classification and for several days from 200 to 300 grams of vegetables may be the only food

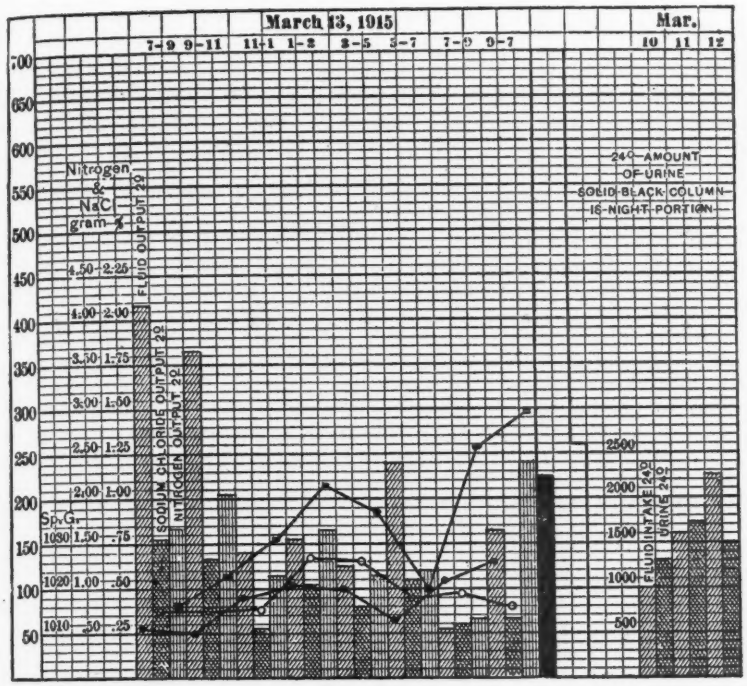

CHART II, Case I.—The series of columns beginning at the left give the amount of urine, sodium chloride, and nitrogen in each two-hour portion from 7 a.m. to 9 p.m., and in the portion from 9 p.m. to 7 a.m. The solid lines joining dots in the space of each column give the specific gravity of the urine and the percentage concentration of sodium chloride and nitrogen. Next is indicated the night portion of urine in relation to the total twenty-four-hour amount. The columns at the right give the fluid intake and urine output in the days preceding the test day.

given, then it may be raised 10 grams. With a carbohydrate tolerance secured, the next step will be to give from 5 to 10 grams of protein, wait and watch and test; if advisable, the protein can be increased by 10 grams. The protein should be carefully selected, as free from gelatin as possible, as glycocoll is a by-product produced by splitting. On the first day of protein addition, egg white should be given, not the yolk unless fat is allowed, continuing until the patient reaches a protein tolerance. When fat is allowed it is usually increased by 10 grams. It seems desirable to individualize the diet to suit the needs of different patients. The first requirement is, that the patient remain sugar-free.

In reference to the change of opinion, that deemed acidosis, which terminated in diabetic coma, a sign of the disease, it is now regarded as due to the presence of unmetabolized fat which has split-up into acetone bodies, to be treated largely

by preventive measures, and it is believed that by reducing the intake of fat to zero and gradually securing a tolerance, it is possible to prevent acidosis. According to very recent statistics (unpublished) tabulated by Dr. Joslin, 66 per cent. of all cases of diabetes died within one year of the disease from coma. Therefore the present outlook is most encouraging, if our cases may not be cured, at the best, a longer life and possibly a useful one is probably assured. Apparently, by the old method, when aiming at getting patients sugar-free, all the carbohydrate was cut off and the diet padded with fat to provide the necessary numbers of calories to meet the increased metabolism needs, and a worse and more insidious result was produced, more fatal than the disease.

Dosage by an alkali is a much mooted question with arguments both for and against, but if the patient may be kept free from acidosis by watchful care, negative fats, or a tolerance secured, wherefore the need of an alkali?

Instead of the long weeks in bed, when absolute rest was considered essential, mild exercise, such as short walks, gradually increasing, pleasant familiar tasks and even mild gymnasium exercises are prescribed and encouraged for ambulatory patients.

Not only have radical changes occurred in the diets of all diabetic patients in hospitals and the general treatment been greatly modified, but consideration of the after-care is begun, before the patients are ready to leave the hospital, when a sort of education is planned, whereby they are able to care for themselves later. They are taught to test their urine by the simple method of using Benedict's solution,* and, upon the slightest trace of sugar, they are made to understand it is the signal for one or more fast days or continued until the test gives no reaction.

The percentage values of carbohydrate in certain food stuffs is explained. They are presented each with a card so arranged in carbohydrate percentage columns by Dr. Joslin. They are provided

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* Formula for the Benedict solution.

Copper sulphate (pure crystallized)	17·3 grams or c.c.
Sodium or potassium citrate	173·0
Sodium carbonate (crystallized)†	200 c.c.
Distilled water to make	1000·0 c.c.

† One-half the weight of the anhydrous salt may be used.

The citrate and carbonate are dissolved together (with the aid of heat) in about 700 c.c. of water. The mixture is then poured (through a filter) if necessary into a a larger beaker or casserole. The copper sulphate (which should be dissolved separately in about 100 c.c. of water) is then poured slowly into the first solution, with constant stirring. The mixture is then cooled and diluted to one liter.

with test tubes and a bottle of solution. In some hospitals the instruction is carried farther with more intelligent patients, when they are taught to weigh out their own food and to compute their diets by the tables in the United States Government bulletin and Dr. Locke's little book of "Food Values". An effort is made to keep track of all patients after they leave the hospitals by asking them to return periodically, when the physician goes over them and he keeps a record of each case. Such continuation work goes a step further in the larger hospitals having out-door departments, there they carry a regular diabetic clinic, a weekly round-up of all discharged and mild cases. Each patient brings a sample of urine and tests it, in order to prove that the correct way is followed. A record of the daily amount of urine voided appears on the card returned. At these clinics, simple instructions are continued, foods and diets explained, a few cooking lessons when necessary are given and recipes when requested. An occasional lecture by an outsider is often valuable to keep up the interest. The clinics are in charge of a physician, with an assistant and the coöperation of the hospital-dietitian, usually the social worker follows up all delinquents. There are three of these clinics in Boston.

Thrice-boiled vegetables. "An element of bulk is needed in the diet to give a comfortable feeling of fulness and to prevent constipation." In the severe cases who cannot even have green vegetables Dr. Allen's theory of thrice-boiling the vegetables and throwing away the water was adopted, nearly all the starch is thus gotten rid of.

The vegetables to be thrice-cooked are cleaned, cut up fine and put to soak in cold water, then strained, put into fresh cold water, placed on the fire and allowed to reach 150°F., this water is poured off and replaced by water of the same temperature, which is allowed to boil and so on until the requisite number of times are completed. The aim being to accomplish the end with as little effort as possible. The containers are of sufficient size to hold vegetables enough for six patients' daily supply and a large quantity of water. The vegetables thus cooked will keep over two days in cold storage and the reheating in the steamer is a small affair.

Double gauze squares, are used for boiling, large enough to allow the vegetables to swell without sticking together. The corners are loosely held and tied with a string, the ends left long, that the bundle may easily be lifted from one container to another. They are served with salt and vinegar.

It is not practical to prepare a large series of calculated recipes,

as the quantities of protein, fat and carbohydrate vary for each patient each day. It must be left to the one in charge of such work to produce the best results, with the definite amounts of each as ordered.

The result, when done, is given in the sample below.

DIABETIC DIET

Food	Amount	Protein (grams)	Fat (grams)	Carbohyd (grams)	Calories
Grapefruit	100 grms.	·79	·20	10·09	45·32
Oatmeal	100 grms.	2·80	·50	11·50	61·70
Vegetable (5 per cent.)	200 grms.	2·80	2·50	6·83166	61·02664
Bread	30 grms.	2·79	·36	15·81	77·64
Cheese	20 grms.	5·18	6·74	·48	83·30
Meat	250 grms.	59·90	44·65	.....	641·45
3 Eggs	150 grms.	20·10	15·75	.....	222·15
Butter	50 grms.	·50	42·50	.....	384·50
Cream (40 per cent.)	160 grms.	3·52	64·00	4·80	609·28
Total		98·38	177·20	49·51166	2186·36664

MENU

ARRANGED FROM ABOVE CALCULATION

Breakfast

Grapefruit	100 grms.
Oatmeal	100 grms.
Lamb Chops	100 grms.
Coffee c. Cream (20 c.c.)	150 c.c.

Dinner

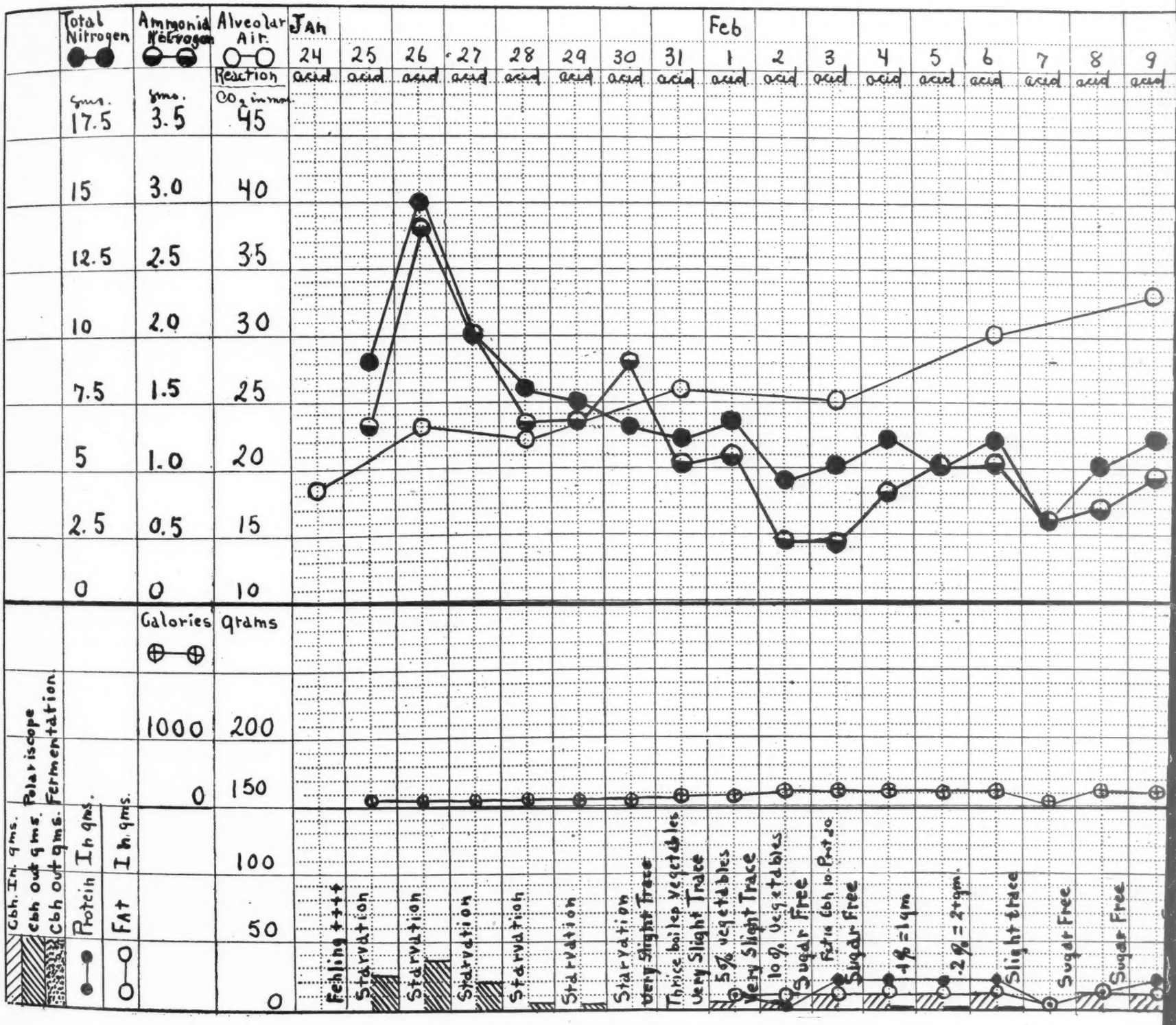
Broth	200 c.c.
Roast Beef	100 grms.
Spinach	100 grms.
Cheese Omelet (2 eggs) (Cheese)	20 grms.
Tea c. Cream (20 c.c.)	150 c.c.

Supper

*Club Sandwich
Custard (1 Egg) (Cream)
Cocoa c. Whipped Cream.

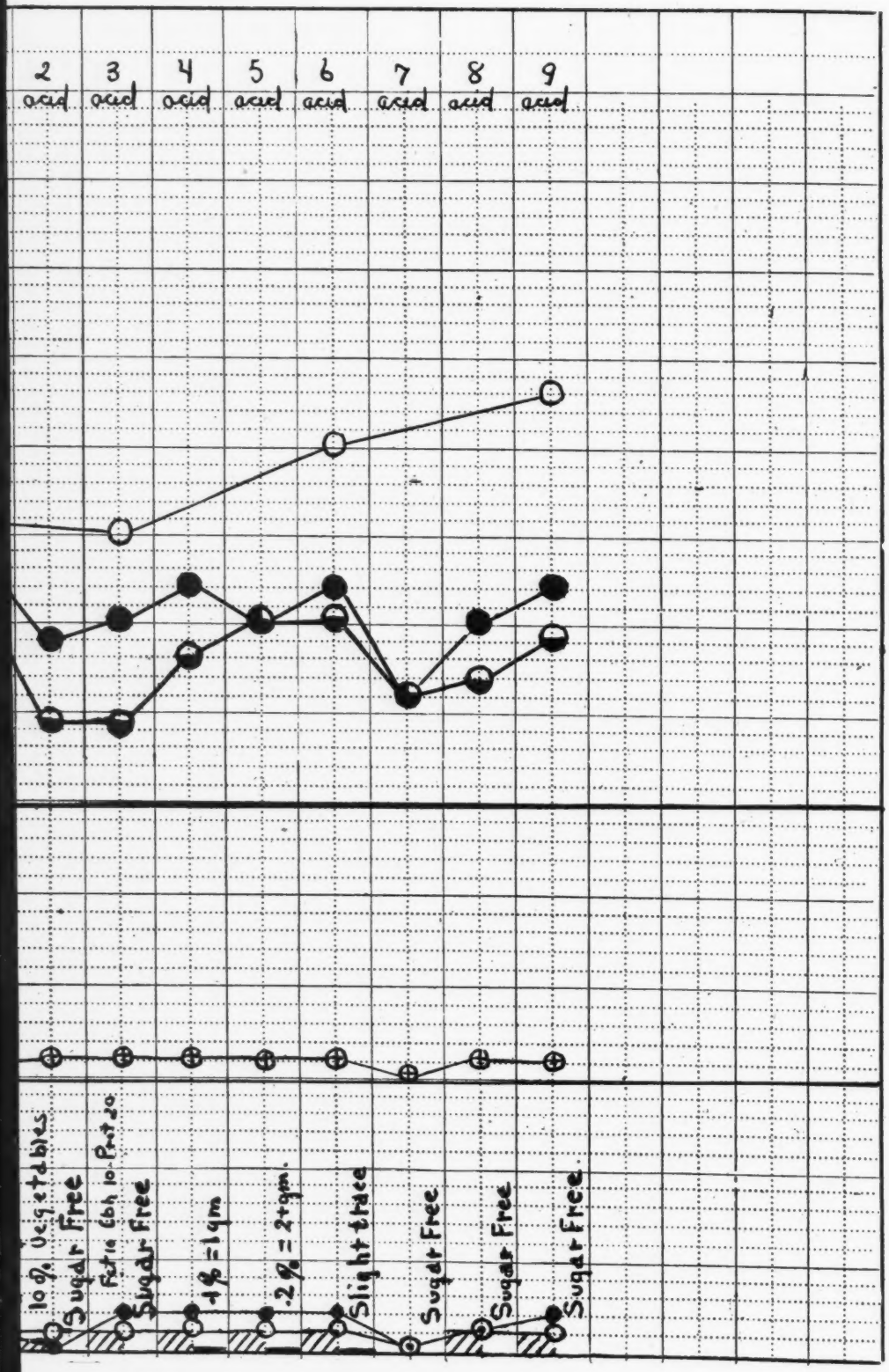
* Patients who are accustomed to having club or hotel service find a club sandwich the most pleasing for supper, it of course calls for a thin slice of toast (and can only be given when sufficient number of carbohydrate grams are ordered to justify the bread), lettuce, a couple of sliced tomatoes, of cucumber, of bacon, hard cooked egg, chicken and mayonaise dressing, topped with chopped parsley or mint or capers or sour pickles.

DIABETIC INTAKE AND OUTPUT CHART *



*Record chart used for all diabetic patients in the Peter Bent Brigham Hospital, Boston.

TPUT CHART *



eter Bent Brigham Hospital, Boston.

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IT was announced at a meeting of the Geographic Board of Canada on March 7th, that a peak in the Canadian Rockies shall henceforth bear the name Mount Cavell as a tribute to the memory of the late Miss Edith Cavell. Mount Cavell rises to a height of 11,200 and is about ten miles from Jasper station, the central point of Jasper Park in the province of Alberta.

THE MEDICAL BELIEFS AND SUPERSTITIONS OF THE KELTIC RACE

By John Cameron, M.D., D.Sc., F.R.S.E.

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IN order to study satisfactorily the manners and customs of the Kelt, and obtain a full and adequate explanation of their origin and significance, it is necessary first of all to make a brief reference to the ancient history of Great Britain and Ireland. It is important at the very outset to note that the original or aboriginal inhabitants of the British Isles were of the Iberian type, a fact which is now generally accepted by ethnologists, This name suggests the probable origin of that race, for it refers to Iberia which was the Roman name for the peninsula which is now represented by the countries of Spain and Portugal—the Iberian peninsula. This ancient race or group of races probably peopled a considerable area of the continent of Europe in the earlier stages of their existence; for when the wave of Gallic invasion burst upon France, the aboriginal inhabitants were driven southwards behind the shelter of the Pyrenees Heights, and westwards into Brittany, while probably many of them sought refuge in the British Isles across what is now the English Channel. A glance at the map of Europe will serve to emphasize this fact, and in relation thereto it is significant to note that many of the manners, customs, and beliefs, and even the dialect of the Cornish people are remarkably akin to those of the inhabitants of Brittany.

Tacitus who was, as we all know, a very accurate Roman historian and a keen observer, gives in his *Agricola* a very clear description of the dark haired Iberian race which the legions of that general encountered when they landed on the shores of Britain. A few centuries afterwards, when the main wave of Anglo-saxon invasion broke upon the British Isles and overran the country, the aboriginal inhabitants were driven to seek shelter southwestwards into Cornwall, westwards into the mountains of Wales, and

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northwestwards behind the protecting ranges of the Grampians. It is therefore not surprising to find that the beliefs and superstitions of the inhabitants of these districts show some very close resemblances.

What has become of this ancient race? The answer to this question is obtained from a study of the modern inhabitants of the British Isles. Even a casual inspection of the hair colour will show that the prevalent tint is brown, varying from the lightest to the darkest shades, while the most frequent eye colour is represented by different shades of "grey". This colour tint has undoubtedly resulted from the blending of the blonde Scandinavian type with the dark Iberian strain. The purely blonde flaxen haired type with the rich blue eyes is not common, whilst the black haired Iberian type is rare. The whole question constitutes an interesting problem in Mendelism, for one occasionally meets with an example of ancestral reversion, or what might be termed in simpler language, a "throw back" to the primitive Iberian or Scandinavian types. My idea in making these introductory remarks is to demonstrate that the modern Kelt is a mixture in varying proportions of the Iberian and Scandinavian types. One is therefore at once faced with the initial difficulty of determining how many of the Keltic beliefs and superstitions are to be accredited to each of these racial influences.

The first superstition I wish to refer to is probably Iberian in origin. It relates to a peculiar rock which lies in the bed of the River Dee in Aberdeenshire, Scotland, The portion of this rock which projects above the surface of the water has a circular hole in it, just large enough to allow the passage of the body of an average sized adult through it. It is known locally as the devil's needle. The opening is just above the surface of the stream in a normal flow, and has no doubt been produced by the influence of the water acting during periods of flood through countless ages. The local belief about it is, that wives who are not blessed with a family may have their wishes granted if they can crawl through the hole in this stone. To effect this the devotee would have to wade almost knee deep in a swift flowing current, then wriggle awkwardly through the opening in the rock into a corresponding depth of water on the other side. It will be quite clear to the medical mind that we have to deal here with imitative sorcery—the passing of the person's body through the hole in the rock evidently being intended to represent by suggestion the passage of the child's body through the pelvis and vulva during birth. No

records appear to exist as to the efficacy of this ritual and I have never heard of the rock having been used for this very estimable purpose in recent years. Modern biologists may perhaps refuse to accept the idea that anything so abstract as imagination and mimicry would be able to produce such a substantial or materialistic condition as pregnancy. In any case one cannot but admire the deep mental conviction and the imaginative temperament of the devotees of this very interesting and suggestive ceremonial.

Records exist of the performance of a somewhat analogous ritual in Cornwall thus suggesting Iberian origin. In this English county there exists a large block of stone with a hole in it through which delicate or debilitated children were pulled in the belief that an improvement in their condition or even a cure would result. In this instance the great idea seems to have been to carry out a process of rebirth of the child in the hope that a transformation in the child's constitution for the better would result.

The next example or proof of the existence of this remarkable belief is found in quite a different part of the country. In the Island of Islay off the west coast of Scotland is a famous rock with small arch in it which has attracted its pilgrimage of invalids for ages. The individual in passing through the arch was supposed to have thrown off his malady, which was, however, liable to be transmitted to the next person who made use of the opening, unless he could procure a substitute to pass through before him. An animal was believed to be effective for this purpose—an old dog being utilized as a rule. The islanders declare that this arch has been used for curative purposes within quite recent years.

The Gaelic word for health is *slainte* and that for disease is *euslainte*, which means literally "out of health", the inference being that the Keltic mind recognized disease as a more or less temporary deviation from the normal *slainte*. The word *euslainte* is thus a much more felicitious title than the modern term "unhealthy", the use of which seems to infer that the person had never been anything else but unhealthy. The primitive Kelt was strongly impressed with the universal belief that plants were provided by nature to supply remedies for the cure of disease. This conviction seems to have got rooted firmly in the minds of all races from the very dawn of medical thought, and was certainly firmly believed in by the ancient Kelt. The result was an amazing list of remedies, some very good and some very bad. At any rate one can give him credit for having recognized the value of foxglove, broom and juniper in dropsy, though he was quite ignorant as to the pathology

of this condition or of the pharmacological action of these remedies. The crude knowledge of the action of these drugs, thus acquired, has proved of inestimable value in paving the way to a more scientific understanding of the action and mode of application of these remedies. It is indeed remarkable to think that foxglove, or digitalis, to give it its generic name is still one of the most valuable drugs in the B. P. The list of nostrums for stomachic troubles and other disorders of the alimentary system was as vast as it was varied. The efficacy of pine derivatives in pulmonary complaints was apparently freely recognized. In this relationship it is instructive to note that the Gaelic name for phthisis is *anabhracht* or "fatless disease." From this standpoint they argued that the rational treatment for this condition, therefore, was to gorge the patient with abundance of fatty food. A description of the uses and modes of application of the variously vaunted remedies, many of them of the most extravagant and bizarre character, would unduly increase the length of this discourse.

Precious stones were held in reverential awe as bearers of good luck or even the reverse, each variety being invested with its own special attributes for good or evil. It is a strange fact that the flint arrow head was in particularly big demand as a talisman up to within quite recent years and was supposed to protect the wearer from witchcraft or the powers of evil. It was usually worn suspended around the neck, the idea being that if it were allowed to fall to the ground the spell would be broken. I have heard of an old farmer in my country who was the proud possessor of a charm of this nature. He was invariably delighted to show it to enquirers and dilate upon its many virtues. He always took good care, however, to hold his open palms between it and the ground whilst the visitor was engaged in handling it, as he did not wish to run the risk of losing its talisman effect. Whoever refuses to believe in the existence of the canny Scot after this will indeed be very hard to convince.

The belief in the power of the "caul" to protect the possessor from drowning is a very wide spread one amongst the sea-faring classes in Scotland. As is well known, the child's head during parturition is not infrequently delivered with the membranes unruptured, the child being then said to have been born with a "caul". No evidence appears to exist as to the origin and significance of the term. The idea which may possibly have entered the lay mind was, that the membranes, drawn tightly as they would be, over the child's face, would prevent it from being drowned in

the liquor amnii during parturition; but the medical mind thoroughly recognizes that nature has amply provided for that contingency in other directions. Anyhow the dried caul used to command high prices amongst fisherman and other sea-faring people and is up to this day still a marketable commodity.

The mode of burial of the dead in Scotland in prehistoric times offers a wide field of interest to the ethnologist. We hear occasionally of these burial chambers, or stone cists as they are popularly termed, being opened up by the plough share, and exposed to the modern gaze. They are usually quite near the surface and are lined with rough stone slabs. The skeleton is found as a rule in a cramped or doubled up position with the limbs strongly flexed and the head bent forward on the chest. The remains are usually accompanied by jars containing food and a few weapons intended no doubt for the use of the deceased during the transit to the after life. This characteristic attitude of the body is usually supposed to be due to the exigencies of space. I always felt, however, that there was a deeper significance underlying this and on investigating the subject further found that in ancient Egypt during the prehistoric or predynastic period the usual way of disposing of the dead was to put them in this doubled up attitude in small chambers roughly lined with stones. I may mention that there is a splendid example of such a prehistoric burial in the ancient Egyptian galleries of the British Museum. A few more inquiries on this subject brought to light the interesting information that the ancient Incas of Peru were accustomed to dispose of their dead by inserting them in this characteristic attitude in huge earthenware jars which were left in the open exposed to a blazing sun until the contents became absolutely mummified. There is a fine specimen of this method of burial in the Manchester University Museum. The main outcome of these investigations was that the attitude of the remains in all the cases mentioned was found to be exactly similar to the position of the unborn child or fœtus in the womb and the result to be deduced from all these facts was that the deceased was put into the fœtal position in order to be ready for the re-birth or in other words the Resurrection. There would thus appear to be very strong grounds for believing that many primitive races were firmly convinced of the existence of an after life. It must be remembered that the stone cist burials in Scotland are supposed to belong to the pre-Christian age; for after the advent of Christianity the method of burial in the extended posture in stone coffins appears to have been almost universally adopted.

The word sarcophagus is derived from the Greek words σάοξ flesh and φαγεῖν to eat, the idea no doubt being that the soul was alone regarded as immortal and the flesh was therefore allowed to perish. It is a very striking fact that in ancient Egypt during the dynastic and Ptolemaic periods the fœtal position was likewise given up in favour of the extended posture, and for the same explanation, namely, that the ancient Egyptian of the dynastic period thoroughly believed that the deceased possessed a double or *Ka*. This ethereal personage was supposed to leave or return to the mummy at will. In an elaborate burial of the twelfth dynasty which I had the honour to investigate eight years ago doors were painted at intervals around the coffin for the passage of the *Ka* (in some cases these doors are actually made to open). Two model boats were provided in order that the *Ka* might enjoy an occasional outing on the Nile, whilst jars containing food and several other articles of tomb furniture were likewise provided. In this relationship it is of interest to note that the almost universal method of burial with feet to the east undoubtedly originated in ancient Egypt. The River Nile runs due north and it is remarkable to note that all the tombs are situated on the western bank. The orientation of the deceased was therefore no doubt arranged with the idea that he would be in a position to face unflinchingly the dawn of the resurrection.

An extraordinary belief which pervades the Keltic mind is that known as second sight. A characteristic manifestation is as follows: A person of normal mentality would suddenly call out, "Oh, Mr. So and So has had an accident," or "Mr. So and So is dead," and sure enough, at that very moment the individual named would be found to have suffered the injury described, or have died. On questioning the person who had this sudden inspiration, he would usually answer: "It suddenly came into my head." The following is another manifestation. An individual would suddenly see a person, whom he knew and recognized, moving towards or away from him, *shrunk to half his normal height*, and then just as suddenly vanish into thin air. This is always looked upon as a foreboding of evil, for the person seen would be found to have died at the time the apparition appeared. This unpleasant experience has usually been attributed by sceptics to a rather free indulgence in the national beverage, but I may say in reply to that accusation, that the usual effect of alcohol in immoderate doses is not to shrink the size of the person observed but rather to reproduce him in duplicate.

Dr. S. J. MacLennan informs me that in Cape Breton, which is of course a strongly Scottish community, many old Keltic beliefs and superstitions hold their own to this day. Perhaps the most interesting is the prevalent belief in the curative powers of the seventh son of a family. Apparently he is still in demand for the cure of all ailments by touch, this mode of treatment being supposed to be particularly efficacious in all tuberculous manifestations.

I must apologize for these rough notes which are entirely written from memory and refer almost solely to the Scottish Kelt. If I had had access to literature I could have dilated considerably on the subject. I have endeavoured, however, to give you a brief insight into the mentality of the ancient Kelt, which it is hoped will provide you with some idea of his character and his philosophy. The greatest nation is that which produces thinking men, and I consider one may fairly claim that it is the imaginative temperament of the Kelt taken in conjunction with his wonderful powers of adaptability to his environment which has made him such a great coloniser and empire builder.

A CONVALESCENT home for Canadian soldiers has been established at Dulwich, England, by the Massey-Harris Company, of Toronto. The home, which will be maintained by the Massey-Harris Company, is beautifully situated, in an old mansion surrounded by attractive grounds in an estate of thirty acres.

THE following figures were recently quoted by Dr. Perrin in an address before the Société de Médecine de Nancy: Number of vaccinations against smallpox performed during the first seven months of the year 1915 on soldiers of all ages, 29,076; number of successful cases, 13,616, or 46,14 per cent. Percentage of successful vaccinations amongst men between thirty-six and forty-two years of age, 75. This percentage was even higher (78) amongst the reserves of from forty-three to forty-eight years of age.

PROSTATIC HYPERTROPHY AND TREATMENT BY SUPRAPUBIC PROSTATECTOMY

By C. L. Fuller, M.B., (Tor.)

IN considering prostatic hypertrophy, one must first consider the anatomic features and relations of the gland to grasp what takes place in this condition.

Normally a conoid shaped organ with base above and apex below and average length 34 mm. and width 44 mm. and weight 16 to 17 gms., resting on the urogenital diaphragm below, while above its muscular fibres radiate into those of the bladder, it is commonly described as a gland of five lobes, an anterior, posterior, two lateral and the so-called middle lobe, or that part situated above the common ejaculatory ducts. It has a muscular connective tissue portion as supportive and a glandular or secretive portion. The intra-urethral aspect shows about the middle of the posterior wall a longitudinal elevation about 3 mms. high called the colliculus seminalis or verumontanum. On the anterior declivity of this is a slit-like aperture the sinus pocularis (uterus masculinus). This is a purse shaped pouch some 10 to 12 mm. long and lined with mucous membrane. On the right and left borders of this sinus, open the ejaculatory ducts, while on both sides are to be found the openings of the prostatic ducts some fifteen to thirty in number. It possesses a fine, closely adhering, fibrous capsule of its own and is fixed in its position by fibrous tissues. The visceral fascia as described by Denonvilliers, is detached laterally and posteriorly from the pelvic fascia and appears as an application of this fascia upon the prostate. From the prostate it proceeds to the bladder enclosing the vesico-prostatic and pudendal plexuses, seminal vesicles and ampullæ of the ductus deferens. Excepting the posterior surface which is covered by the Denonvilliers' fascia, the prostate can only be artificially enucleated from its anatomic capsule. In the hypertrophied gland the capsule seems to be formed by the atrophied prostatic tissue which has been compressed. The proportion of supportive and glandular tissues vary, usually the glandular predominating. The prostatic blood supply is from

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the inferior vesical arteries which are terminal branches of the internal illiac. It is richly supplied with veins, has a plexus within the capsule that pours the blood into the plexus pubic impar, along with the deep dorsal veins of the penis to the prostato-vesical plexus, thence to the iliac veins. Probably this explains why in prostatectomies emboli are released which may produce sudden death.

From the above it will be seen that the more important anatomic relations of the prostate, from a pathologic standpoint, are (a) that the base is in immediate contact with the floor of the bladder; (b) that the posterior surface is separated from the rectum by only scant tense cellular tissue, poor in fat; (c) that the body of the gland embraces a considerable portion of the urethra; (d) that it communicates with the seminal vesicles and ejaculatory ducts and through the vas deferens with the epididymus and testicles.

Pathologic anatomy: Hypertrophy of the prostate so-called represents an enlargement and change of form caused by an increase in its individual tissue elements, and of these the fibromuscular stroma is almost always at fault. Tandler and Zuckerkandl investigated by pelvic sections forty-two consecutive cases of hypertrophy and state that total glandular enlargement is erroneous and that the hypertrophy in the sagittal plane takes place exclusively in that part of the gland between the ejaculatory ducts and bladder, or the so-called middle lobe of the prostate. The rest of the gland at the same time is reduced in size, due to pressure and atrophy. The reason for this cannot be stated. Although the place of origin and zone of hypertrophic extension are relatively uniform, nevertheless the number of individual variations in shape is almost inexhaustible, since these are dependent upon the size of their individual parts, their direction of growth, the localization of the first starting point, also from the variable extension of the glandular zone of the middle lobe. On examination of a specimen the relation of growth to the ductus deferens shows at once that the hypertrophy is situated only in that part of the prostatic ring which is bladderward from the ducts, whereas the portion directed toward the perineum is not hypertrophied but instead appears compressed to a thin plate. The mass is developed toward the bladder and with elongation of the enclosed urethra has elevated the vesical floor in toto and also produced a bulging forward of the trigone. In other cases this bulging affects the lateral, sometimes even the anterior boundary of the orificium. These differently shaped projections of the prostate. therefore, are only

variations of one and the same condition. The prostatic urethra is thus subject to changes in direction, form and dimensions. For example, normally a feebly arched course, it may be bent almost to a right angle. The urethra is apparently lengthened, this is due to the pushing up of the bladder wall by the encroaching mass. Frequently the hypertrophied prostate does not completely enclose the urethra but is open anteriorly. At other times it may assume a tumour formation hanging by a pedicle, acting as a ball valve at the orifice. The thickness of the prostatic capsule also depends on the degree of compression due to the hypertrophy. Tandler and Zuckerkandl conclude from their observations that the hypertrophy without exception affects this so-called middle lobe and basing their opinion upon these anatomic grounds the prostatectomy by the vesical route, is the operation of choice.

Etiology: With regard to this hypertrophy, no hypothesis has to do with facts. It is, however, a normal phenomenon of senility rarely occurring before the fiftieth year. Its occasional occurrence in young men is accounted for as an instance of premature senility. It is commoner among those who live sedentary lives and especially those who worship at the shrine of Bacchus. No doubt overfeeding and chronic constipation may influence it, owing to temporary congestion of the gland, as they do other pelvic organs. Acute and chronic diseases affecting the genitalia have also been cited as factors of causation, for example, gonorrhœa, tuberculosis, and syphilis.

Neoplasms: Carcinoma is fairly common but sarcoma is relatively rare. Malignancy in the prostate is observed from earliest childhood to old age, middle period of life is relatively free. The frequency of prostatic disease and the irreparable damage that may result when the conditions are allowed to continue are forcible arguments for the study and careful examination of the prostate. It is a regrettable fact that many otherwise well informed physicians ignore this organ in diagnosis. Many symptoms which they ascribe to weak bladder or kidney disease, are in reality due to prostatic disease.

A rectal examination should be a routine procedure with all males presenting themselves for diagnosis of obscure abdominal as well as genito-urinary trouble.

Simple obstructive hypertrophy of the prostate is usually insidious in its onset, the patient presenting himself complaining of being awakened at night to urinate and as time goes on is having to get up earlier than usual. When he was first troubled he would probably tell you that, whereas he was able to sleep till five or six

in the morning, he may be awakened at one or two o'clock to answer the call of a distressed bladder. If these symptoms have not attracted his attention, he may come complaining of a sudden inability to pass his urine after some exposure to cold or excessive indulgence in alcohol or coitus. Even this sudden retention may pass off spontaneously and consequently may be dismissed by the patient as a trivial matter. It may appear again and again, with intervals of increasing frequency of urination, and the patient may not present himself to you until the final touches of calculus cystitis and ascending pyelitis are superadded to his deplorable condition and complete his miserable and filthy invalidism. The diagnosis of such a clinical picture is not difficult. Obstruction of the prostate is practically written across the face of it. To complete your examination, you will find per rectum an enlarged gland, as described above, while a urinary examination will show any form of cystitis or signs of kidney destruction with more or less residual urine. The amount of residual urine is an index to the degree of obstruction. In asking him to pass his urine you may notice that it will take him some time, and if he strains at all he may close off the stream owing to enforcing the enlarged middle lobe over the orifice and atony of the muscular wall. The urine too may show blood which might be accounted for by the presence of stone or a malignant growth. The physician knows that the surgical removal of the gland is the only procedure that will offer a cure and he also knows that he is dealing with an aged patient with an impaired renal and circulatory system. As a result he may lay too much importance on the renal or cardiac disturbance. Cases of marked kidney disease, cases in which albumen, pus, and casts are found are often seen to clear up entirely after drainage and removal of the prostate. These cases are not so much actual kidney disease as kidney impairment, due to irritation from back pressure. Cases of this type must be considered as poor surgical risks, nevertheless they should be brought to operation. As a determining factor for operative or non-operative treatment, the functional test by pheno-sulpho-phthalein is most valuable in giving us correct information of the real condition of the kidneys.

In the same manner the circulatory system is remarkably improved by prostatectomy. Whether prostatic disease directly causes myocarditis just as gall-bladder disease or other infections are held responsible for myocardial changes by the different authorities or whether pyelitis and nephritis are the direct etiologic factors of the myocarditis, the enlarged prostate acting only as an indirect factor would be very hard to say. However, we do see

signs of myocardial disease, as evidenced by increased heart rate, irregularity, and not infrequently dilatation, improve and entirely disappear after operation and also without special treatment to the heart muscle itself. Patients with these symptoms are in consequence bad risks for operations and for them it is all important to make every effort by careful preliminary treatment to lessen the dangers of anæsthesia and operation. If then, an operation is to be decided upon, we must choose either the suprapubic or the perineal route, the former in my opinion the better. In advance cases with a bad cystitis the operation is done in two stages.

In all operative procedures, the question of mortality is of high importance. The advocates of the "perineal route" claim lessened mortality as an argument in their favour. That is true of old statistics, but does not hold good to-day. Mortality does not depend so much on the operation as upon the functional capacity of the kidneys and the condition of the heart and general circulation which is essentially the same for either method. If there is a marked cystitis, much residual urine (two to five ozs.), and if with the phenol-sulpho-phthalein test (6 mg. or gr. 1/10) injected into the muscles, appearing slowly and only excreted in the urine to the extent of 50 per cent. in two hours, a kidney insufficiency is demonstrated, preparatory treatment is certainly indicated. This preparatory treatment consists in copious ingestion of water, the administration of 40–50 grs. of urotropin daily, repeated catheterization or better still a permanent catheter introduced into the bladder through the urethra. If this is not feasible a cystotomy under local anæsthesia should be done and the bladder drained from one to three weeks. After this the gland can be safely extirpated.

The advantages of the suprapubic route may be here specified. By the use of a McLean cystotomy staff the technique is much simplified, reducing the danger of hæmorrhage and wounding of the peritoneum to a minimum. By this route also there is less likelihood of incontinence of urine, less danger of injuring the rectum and greater possibility of preserving the sexual function. There is also better drainage by this method than the perineal because the bladder does not empty itself by force of gravity but by muscular contraction, and the only requisite is to use a good sized drainage tube and insert only about an inch below the anterior bladder wall. The more rapid closure of the wound is probably the one great argument in favour of the perineal operation. It is true that perineal wounds do very often close more rapidly, but what about the incontinence of urine that so frequently accompanies

this operation. Besides mortality the functional results that follow any operation should ever be prominent in the mind of the surgeon. In the treatment of these cases the ability of the patient to empty his bladder, and, more important still, his ability absolutely to control the flow of urine is the functional result we seek to obtain. Can this be obtained by either operation? In the suprapubics, yes, for in all cases of my experience there has been no difficulty in controlling the stream; while in the perineal operation you may get only partial control.

Incontinence is caused by injury to the "cut off muscle" or its nerve supply. In the perineal operation, this muscle (the compressor urethra) and its nerve (the perineal branch of the internal pudic nerve), are very apt to be cut or in some way injured. By this route it is almost impossible to avoid injuring these structures to a greater or lesser degree and as a result we get an incontinence of urine, which, depending upon the nature and extent of the injury, will be partial or complete, temporary or permanent. It is incontinence of urine which has caused so many patients to defer the operation until the damage to the bladder and kidneys, caused by the obstructing enlarged prostate, is practically irreparable.

A recto-vesical fistula is a post-operative complication which in suprapubic operations is practically unheard of. In the perineal, however, from the anatomical position of the operative field, this complication is not so rare and has occurred in the hands of the most able surgeon.

Besides eliminating incontinence and recto-vesical fistula the suprapubic method offers another advantage which is all important —especially when operating upon the aged, and prostatectomies are practically always performed on this class of patients—i.e., greater ease in operating and consequently of operating more rapidly. We believe the suprapubic operation can be done in half the time it requires to do the perineal. The bladder can be opened in one or two minutes and the enucleation at once begun. The completed operation should not take longer than ten or fifteen minutes.

The operative technique employed is as follows: Nitrous oxide and oxygen anæsthesia, with a preliminary dose of morphine and atropine, is the anæsthetic preferred because it is not followed by nausea. It permits the patient to take liquid and other nourishment soon after returning to his bed.

The bladder is cleaned and emptied. The cystotomy staff is then introduced and the end pushed well up against the anterior bladder wall. A short incision $1\frac{1}{2}$ to 2 inches in length is made

just above the pubic bone. Fascia and muscle are divided when the cystotomy staff will be seen and felt pushing the anterior bladder wall into the wound. The peritoneum is pushed back well out of the field of operation. Two guide sutures are now placed into the bladder wall on either side of the projecting point and the bladder is quickly opened between these directly on the tip of the staff. The index and middle finger of the bare right hand are now introduced into the bladder, the assistant at the same time drawing the staff out in front of them while the index finger of the gloved left hand is lubricated and inserted into the rectum. While the finger is being inserted into the rectum the fingers in the bladder are exploring it for stone. The finger in the rectum now raises the gland upward to facilitate enucleation. In beginning the enucleation, experience with these cases is a great asset to the surgeon for sometimes only one large projecting lobe causes the sole obstruction and its removal may be all that is required. It can be made to peel out just as one can peel out a subserous fibroid of the uterus. As described above, the compression, as a result of hypertrophy, has made as it were a surgical capsule of its own and in ordinary so-called general hypertrophy we use the method of Kreyer as modified by Squire. With this method, the index finger in the bladder, instead of being forced through the capsule of the most prominent portion of the gland, is inserted far into the urethra. When the anterio portion of the enlarged gland is felt, the finger is pushed through the urethral mucosa. By this time the internal sphincter, already dilated by the enlarged gland, is still more dilated and is not severed. The finger is not only pushed through the mucosa but also (and that is very important) through the capsule. This procedure is performed first on one side and then on the other and then posteriorly, when the enlarged lobe will be delivered into the bladder. The urethra will tear at its weakest point which is just above the ejaculatory ducts. This procedure leaves the posterior lobe intact and at the same time preserves the ejaculatory ducts. Irrigation thus far, except for the intitial bladder washing, has not been used. If clots form quickly these are sometimes washed away, but more often wiped away with dry sponges. If there is much hæmorrhage, which is unusual, a gauze plug can be fixed to the end of the staff by a suture and drawn into the bed of the prostate and kept there under pressure until the bleeding has stopped. When the bladder is well cleaned a large drainage tube ($\frac{3}{4}$ inch) is inserted to the extent of an inch or so through the bladder incision. Inserting the tube too deeply will cause spasm of the bladder wall. The

guide sutures are now tied across the incision in the bladder wall; four or five catgut stitches are used to close the bladder tightly around the tube. The muscle and fascia are drawn together in the usual way and two or three silk-worm gut sutures complete the operation.

The post-operative treatment is comparatively simple. Here meddlesome interference and fussing does more harm than good. If the drainage tube is properly inserted and is of proper size, there will be free drainage and irrigations and washings are contraindicted. Copious injections of fluids per rectum for twenty-four hours and by mouth as soon as the patient's stomach will bear it (which if nitrous-oxide oxygen has been used is usually in two or three hours) is the only flushing that is necessary. If with these measures the urine still remains highly acid, with a tendency to formation of uric acid crystals around the wound, then the internal administration of urinary alkalies (potassium acetate, potassium citrate or liquor potassæ) is indicated. No amount of bladder irrigation can supplant the internal administration of alkalies and no amount of bladder irrigations will prevent the accumulation of uric acid crystals. All that is necessary, as far as local treatment is concerned, is a change of dressings should the urine lead along side of the drainage tube. The drainage tube is left *in situ* for from six to nine days; after removal of the tube the urine will still escape from the suprapubic wound and it will then be necessary to change the dressing every two hours or maybe oftener for the patient's comfort. About the wound where the skin is liable to become excoriated from the urine, a protection can be adequately used in the form of a dusting powder like stearate of zinc. At the end of the second week the patient is encouraged to urinate. Before this time it is not well to enforce urine over the prostatic site which is covered only by granulations. Complete healing of the cavity from which the prostate was removed requires longer time but at the end of the second week, healing has sufficiently advanced to allow urine to pass over its surface. At the end of the third or fourth week, and at longer intervals after, it is well to pass a soft catheter or a sound (very gently) into the bladder to insure a good opening of the vesical end of the urethra. Local treatment after this is uncalled for and, I believe, really harmful.

It is generally conceded that old patients withstand the recumbent position poorly and for this reason it is well to place them in the sitting position as soon after a prostatectomy as is consistent with their general condition which will usually be on the second or third day.

THE RESULTS OF A YEAR'S WORK IN THE TREATMENT OF ACUTE APPENDICITIS

By E. R. Secord, M.D., C.M., F.A.C.S.

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DURING the year 1915 forty-six cases of acute appendicitis were admitted to the service of the senior author at the Brantford General Hospital. This series does not include any case belonging to the sub-acute, chronic, or interval type.

Treatment. The treatment, in every case, was *immediate* appendectomy.

Results. Forty-five cases were cured, and one died, a mortality of less than 2.3 per cent. No selection of cases was made, and no case was refused the chance of recovery afforded by operation, because of its advanced nature, or apparent hopelessness.

Classification. On the basis of operation findings, these cases have been classified as follows:—

Acute: 27.

Acute suppurative: 3.

Acute gangrenous: 4.

Acute with localized peritonitis: 5.

Acute with generalized peritonitis: 7.

The only death in the series was one of the last group.

It would therefore appear that the mortality from acute appendicitis should be very small, and that when *procrastination*, in the early stages, is eliminated, it will be practically nil. We believe that, in general, the mortality rate of any surgeon is much more a reflection of the diagnostic ability of his medical confrères, than dependant upon his own individual skill. Almost any surgeon can save nearly 100 per cent. of his cases, *if operated early enough*, but the most brilliant surgeon living cannot show a good mortality record if his cases are all of the advanced general peritonitis type.

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In considering the essentials of a non-mortality treatment of acute appendicitis, we would therefore class as most important:

1. Early diagnosis, and

2. The recognition of the propriety of the statement that once the diagnosis of acute appendicitis has been made, there is *only one permissible treatment,* and that is removal of the offending organ at *the earliest possible opportunity.*

We would particularly desire to contradict an impression, somewhat prevalent in the minds of a certain section of the medical fraternity, that there is some mysterious reason why appendix cases should not be operated "after the third day", unless, or until, a localized abscess has evidently formed. An inflamed, suppurating, gangrenous, or perforated appendix, should be removed at the earliest possible opportunity, whether that be on the first day, the fourth day, or the tenth day. We quite agree that possibly operations on a localized abscess, at a late day, may show a better mortality record than operations done on or about the fourth day, because the acute fulminant streptococcus peritonitis cases have all died before the late day, and are consequently not credited to the operator's mortality column, but by properly carried out operative procedures at the earlier period a certain large percentage of even these desperate cases can be saved, and the milder cases that are going to localize will not in any way be less likely to recover.

As this is a résumé of results, the matter of diagnosis will not be discussed, except that we would like to draw attention to the danger of a mistaken application of Murphy's dictum that elevated temperature is a practically constant symptom of appendicitis. ("I have had only three cases of appendicitis without temperature." *Clinics of John B. Murphy,* Vol. II, No. 1, p. 108.)

We quite recognize, that, if one had the opportunity of seeing a three hour chart from the onset of the attack, probably at some time during this period there would be elevated temperature. But unfortunately, as surgeons, when we see the patient, either in the hospital, or in consultation, that time has frequently passed, and though elevated temperature may be a frequent symptom of appendicitis, it is by no means a constant symptom of a gangrenous appendix, or of a localized peritonitis. We know of no other factor more responsible for delay on the part of the medical attendant than a normal temperature; and when, as consultant, one points out that the temperature is of no significance, immediately Murphy is quoted to the effect that fever is a practically constant symptom

of appendicitis, the attendant, apparently entirely overlooking what Murphy explicitly states, and reiterates time and again—that a dead appendix no longer gives the symptoms of appendicitis. ("The appendix which is dead, like the patient who is dead, *presents no symptoms.*" A gangrenous appendix causes no pain because its nerves are dead. It produces *no elevation of temperature or leukocytosis* because absorption of the products of infection is impossible through its dead mucosa, (*Clinics of John B. Murphy*, Vol. IV, No. 3, p. 445.) Consequently, we feel that the thermometer has no place in the diagnosis of "appendicitis", using that word in its general and broader sense, to include the sequelæ as well as the actual condition.

TECHNIQUE. The technique of appendectomy is fairly well established, and reasonably uniform, and consequently needs no extended discussion. We use the McBurney muscle splitting incision in all *acute* cases. In chronic or interval cases, with which this article does not deal, the split rectus incision has many advantages.

We are opposed to the *inversion* of the appendix stump, either by inversion into the cæcum, or by the so-called inversion produced by the application of a purse-string suture. The appendix stump is a potential source of infection, and we believe that the general peritoneal surface and free omentum are much better capable of dealing with that potential infection than is the tiny sac of tied off peritoneum with which the stump finds itself in contact after the application of the purse-string suture. We believe that the cooked appendix stump separates from the cæcum at the line of ligation, is absorbed by the cells of the peritoneum and omentum, and that a smoother cicatrix, and one less liable to form adhesions, is produced, than when the stump is enclosed in a fold of cæcal wall, with a certain possiblity of abscess formation. We are opposed to the inversion of the stump into the cæcum, without primary ligation, because of the danger of free hæmorrhage from the uncontrolled vessels which are not occluded by the purse-string suture.

DRAINAGE. If the appendix contains pus, but there is no evident contamination of the peritoneum, we leave a wick of rubber tissue down to the cæcum. We have been impressed by the frequent occurrence of *late infection* of acute appendix wounds, and feel that in many cases, at least, the tissues of the appendix are already contaminated by bacteria, although macroscopic perforation may not have taken place. The gloves of the operator hence carry a small amount of infection to his suture material,

and the muscular planes, and in about a week there is elevation of temperature, and an intra-mural abscess is discovered, usually containing B. coli. The drainage of serum, allowed by the rubber wick, which is removed at the end of thirty-six hours, reduces the immediate œdema of the tissues, and thus we believe militates against late infections. In the presence of a localized abscess we invariably use tube drainage, with the frequent addition of a cigarette drain to the appendix stump.

If generalized peritonitis is present—free pus, in other words, a drain is always placed to the bottom of the pelvis. The number of cases where a large pelvic collection of pus may be overlooked unless this is done is considerable, and probably accounts for many of the secondary pelvic abscesses. The suction apparatus may be used if desired, but *once the pressure is taken off* the collected pus, and *kept off by an open tube*, the amount of the pus, much or little, is of secondary importance.

TIME. In every operation for *acute* appendicitis, the minimum necessary time should be spent. There should be no handling of the intestine, no wiping, and no washing, and except for the passing of the tube into the pelvis in free pus cases, no exploration of the abdomen. Ten minutes is ample time for the usual case, if a tube is not inserted, and the most important factor in the reduction of unnecessary delay is *team work* between the operator, his assistant, and the nursing staff. *Anticipation of the operator's needs* is one of the most essential requisites of a good assistant, and with a standard technique, fully understood by the nurses, the time required may easily average that mentioned, without undue haste, or careless suturing on the part of the operator.

AFTER TREATMENT. "Clean" cases are allowed out of bed as soon as they feel like it. If the abdominal soreness has disappeared by the end of forty-eight hours, and a good bowel movement has been secured, confinement to bed is no longer necessary.

In all "pus" cases we earnestly advocate the *immediate* use of a stock preparation of mixed infection vaccine, containing different strains of streptococcus, staphylococcus, and bacillus coli. An initial dose of 2 c.c. is invariably given subcutaneously before the patient leaves the table. If the temperature subsequently runs a perfectly satisfactory course, the vaccine is not repeated, but if at the end of twenty-four hours it is above 100° one-half of one c.c., diluted with warm saline, is administered intravenously, and repeated daily with an increase in the dose of vaccine of one-half of one c.c. each day until the temperature

remains down, or until five or six doses have been given. We believe this to be one of the most important factors in the after-treatment of "pus" cases, and are strongly of the opinion that the initial dose should never be delayed until the patient shows signs of absorption, but should be administered immediately the operation is concluded, in every case where the infection has spread beyond the appendix itself.

All generalized peritonitis cases are placed in bed in the "Fowler" position, and are "Murphy dripped". If at the time of the operation, gaseous distension of the intesines is marked, or if the peritoneum is much injected, indicating an early spreading peritonitis, with its danger of post-operative paralytic ileus, eserine is given hypodermically on the table, and repeated every four hours until a satisfactory bowel movement is secured. We have used "Hormonal Zuelzer" in a limited number of cases but the impossibility of obtaining a supply at short notice, especially since the onset of the war, has caused us to depend entirely on eserin.

TRANSPORTATION. We believe that transportation for long distances exerts a uniformly unfavourable influence on the prognosis of acute appendix cases, and that, consequently, in country districts, better results will be secured by doing the necessary operative work at the patient's home rather than moving him to the hospital.

IN CONCLUSION, we believe that the mortality of all acute appendix cases should not exceed three per cent., and would summarize our plan of campaign as follows:

1. Early diagnosis.
2. Immediate appendectomy, rapidly performed, with drainage if indicated.
3. In pus cases, (a) Mixed infection vaccine.
   (b) Fowler position.
   (c) Murphy drip.
   (4) Eserin if post-operative ileus is feared.

Case Reports

AMŒBIC DYSENTERY.—AMŒBIC ABSCESS OF THE LIVER

By A. H. Gordon, M.D.

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CASES of infections by the Amœba Dysenteriæ do not frequently appear in Montreal, but the two following were seen in the Montreal General Hospital within a few weeks of each other.

Case I. L. I., aged twenty-seven, was a young Englishman with a clean personal and family history, who had spent the years 1912 and 1913 in the interior of Venezuela as a clerk with a mining company.

Before leaving the South, he began to suffer from a mild diarrhœa and in January, 1914, he came to the medical out-patient department of the General Hospital stating that he had a persistent diarrhœa with five or six loose stools per day accompanied by the passage of mucus and occasionally blood.

Correction of his diet and some irrigations of the bowel improved his condition greatly, and I saw no more of him until July, 1915, when he appeared again.

At this time he had an average of two to three loose stools per day. His general condition was fair, though his weight had fallen from 150 to 130 lbs.

Physical examination was negative. His blood count showed R.B.C., 5,920,000; W.B.C., 9,200; Hg. 85 per cent. Sahli. The differential count showed polymorphs, 70 per cent., small mononuclears 23 per cent., large mononuclears 30 per cent., eosinophiles 1 per cent., transitionals 3 per cent.

The temperature touched 99° each evening for the first few days in the hospital.

Examination of the stool upon the warm stage showed actively motile amœbæ. They were quite numerous and in their morphology, mode of progression and size, corresponded with the "Amœba dysenteriæ," of Councilman and Lafleur.

The patient was given Emetine hydrochloride gr. ss hypo-

dermically, once daily, and from the first day his diarrhœa ceased, and thereafter it was necessary to give an enema to get a specimen for examination. He has reported occasionally since, and has received a few doses of emetine as a precautionary measure, but symptomatically has remained well and at the last examination no amœbæ were found.

CASE II. T. D., aged thirty-one, a bank inspector, was admitted to the Montreal General Hospital on April 19th, 1915.

He had lived for several years in the West Indies, Trinidad, and British Guiana. Six weeks previous to admission he had an attack of malaria in Trinidad and was returning to Canada to recuperate, when on the sea one week ago he developed fever and chills, which recurred daily up to his entrance into the hospital.

On admission one was struck by his sallow pallor as well as by his apparent loss of weight. Though of large frame his skin hung in loose folds upon him and his clothes appeared several sizes too large; another striking feature was his appearance of lassitude, his speech and his every movement showed fatigue. His mind was clear but he showed no desire for sustained conversation.

His respiratory, vascular, genito-urinary and nervous systems were negative. The abdomen was soft and lax, the liver was palpable one inch below the costal margin, quite hard, firm and not tender, the spleen distinctly palpable and fairly firm.

The temperature rose regularly to 102° each evening for four days, after which it fell steadily and by the tenth day was normal and remained so during the rest of his stay. Examination of the blood showed a number of irregular forms of Tertian malarial parasites. The blood count showed R.B.C., 3,950,000; W.B.C., 15,400; Hg. 60 per cent.

Under treatment with quinine his general condition, appetite, strength, etc., as well as his temperature, all improved and he was discharged on May 5th to recuperate in the country.

On May 14th, I was called to see him for a sharp steady pain in the right upper quadrant of the abdomen, severe enough to prevent sleep, accompanied by fever and drenching sweats.

A Widal reaction taken at this time was positive and he entered the hospital the second time on May 22nd. His appearance was now if anything worse than on his first admission. The temperature tended to assume a septic type, ranging from 99° to 102° or 103° daily. The abdominal pain became somewhat less but profuse sweats and lassitude and absolute anorexia were the

prominent symptoms. The leucocyte count ranged about 18,000 and the Widal reaction was persistently positive. On June 4th, the following note was made: "There is some general fulness of the abdomen and a definitely localized fulness in right hypochandrium and right side of the epigastrium. The liver edge is palpable 4 c.m. below the costal margin, firm and sharp.

"In the last few days there has been recurrence of pain in the epigastrium and right hypochondrium of spasmodic griping character, worse on deep breathing. Its maximum is over the lower edge of the right costal cartilage and radiates to the right back and right shoulder. There is increased resistance over the upper right rectus. Deep pressure over the palpable liver substance is not painful. There is no jaundice. The spleen is not palpable. No bile in the urine. Stool shows no blood and no parasites. The other organs are negative."

On June 8th, a laparotomy was performed by Dr. A. T. Bazin and a large swelling was found in the liver substance. This was aspirated and opened when an abscess the size of a cocoanut was found to the inner side of and behind the gall bladder. About a litre of thick greenish gray pus was evacuated. The temperature immediately dropped to normal and the patient evinced a marked condition of mental and physical well being. The temperature remained down for four days when it again rose to a daily mark of 102°.

On June 21st, a hypodermic of emetine hydrochloride gr. 88 was given and repeated daily and from that time the temperature fell and the discharge cleared up and the wound healed in a most remarkable manner.

He gained weight at the rate of one and two pounds a day and was discharged June 11th.

Frequent examinations of the pus and scrapings from the wound failed to show amœbæ but in spite of this, the clinical course and the therapeutic test by emetine are to my mind sufficient proof that we were dealing with a solitary liver abscess due to the Amœba dysenteriæ.

This being so we are confronted with the rather unusual combination in the one patient of Malaria Typhoid and Amœbic infection.

DOUBLE FACIAL PARALYSIS

By G. S. Mundie, B.A., M.D.

Clinical Assistant in Neurology, Royal Victoria Hospital, Montreal

THE following case has several points of interest and has therefore been considered suitable for publication.

H. K., male, aged thirty-eight, Polish Jew, married, insurance agent.

Complaints: Weakness.

Present Illness: While out collecting February 29th, 1916 (about four weeks ago), patient felt a severe pain in the legs and had difficulty in walking due to weakness. Was unable to walk upstairs. Two days later felt stiffness in the face, especially the lips. The legs felt better in three days, but even yet he does not walk well. Food collects between his cheeks and teeth so that he has to push it out with his fingers.

Family History: Father, alive and well; mother, died, aged thirty-five, (?) childbirth; one brother, alive and well; one sister, died aged forty-five, insane.

Personal History: No illnesses. Ten years ago was well off, but has lost about $50,000 in different lines of business; denies venereal diseases; married eleven years, four children alive and well; no children dead; no miscarriages; wife, alive and well.

Present Condition: Mentality, good and clear.

Cranial Nerves: 3rd, 4th, and 6th, pupils small, equal, inactive to light but active to accommodation, no ptosis, mystagmus, or strabismus.

5th, nothing abnormal, sensory or motor.

7th, electrical reactions normal, double facial paralysis of the peripheral type, more marked on the left side.

9th, 10th, and 11th, nothing abnormal except for indistinct speech due to facial paralysis.

12th, tongue is protruded straight, no tremor.

Motor System: upper extremity, nothing abnormal, lower extremity, slight weakness of both legs with very slight spasticity.

Sensory System: no anæsthesia, no analgesia, no loss of joint sense.

Reflexes: Biceps, active R.=L; triceps, active R=L; supinators, active R=L; epigastic, active R=L; abdominal, active R=L; knee jerks, brisk R=L; ankle jerks, brisk R=L; plantars, flexion R=L.

Attitude and Gait: no Rombergism.

Sphincters: negative.

Wassermann: blood negative, cerbro spinal fluid, negative four times with two different antigens.

Lange colloidal gold test on the cerebro spinal fluid was positive with a definite paretic curve.

I made a diagnosis for this case, before the serological tests were done, of general paresis and the Longe's gold test confirmed me.

The interesting points of this case are the negative family and personal histories and the negative results of the Wassermann test with both blood and cerebro spinal fluid. The double facial paralysis cleared up under potassium iodide in about two weeks.

A COMMITTEE has been appointed by the Nelson City, B.C., council to approach the provincial government with the request that Section 21 of the Public Health Act be amended. The section referred to states that no land or building is to be used for the accommodation or treatment of cases of infectious diseases within 150 yards of an inhabited building. The position of the present isolation hospital renders it very difficult to give the patients proper care and treatment, and according to the provisions of the Hospital Act of 1902 all cases of infectious disease except small-pox should be treated at the Kootenay Lake General Hospital, which receives an annual government grant. Moreover, under the present arrangement, no training in the treatment of infectious diseases is given to nurses who graduate from the General Hospital.

Editorial

CANADIAN MEDICAL ASSOCIATION

A MEETING of the Executive Council of the Association has been called for Friday, June 2nd, at Toronto, and as this is the last day of the meeting of the Ontario Medical Association it is hoped that a good attendance will thereby be secured. Several questions of importance will be brought up at this meeting, the most urgent perhaps being that of the annual meeting. For reasons well known to our members the annual meeting has been postponed for two years in succession, but it is feared that any further postponement might endanger the existence of the Association as it undoubtedly would that of the JOURNAL, which depends largely for its material on the papers presented at the meeting. Another matter of importance is the question of the finances. Owing to the many discontinuances of membership, which have been received during the past two years, on account of the absence at the front of a large number of our members, the income of the Association has been considerably reduced. In spite of this fact, however, by strict economy it has been possible to carry on the work fairly efficiently. Various other matters of minor importance will be brought up for the consideration of the Council.

HOSPITAL DIETETICS

WE desire to call attention to the paper on "Hospital Dietetics" which appears in this number of the JOURNAL and which has been written for us by the lady dietitian of the Peter Bent Brigham Hospital of Boston. The importance of a dietary modified to suit the sick has been dimly appreciated from the earliest days of medicine; Hippocrates

placed emphasis on its value; but until the middle of the last century our scientific knowledge of the principles underlying dietetics was very limited. Even until recently dietetics has been looked upon as a very minor method of treatment to which little serious study has been given by the majority of our profession. As a consequence, a disregard of the rules of scientific dietetics has been noticeable in many of our hospitals where patients have been fed without due consideration of their condition and food has often been presented to the patients in its most indigestible forms.

During the past decade, however, the importance of dietetics as an important department of therapeutics has come rapidly to the fore and it now claims to be regarded as one of our most potent means of therapy in the treatment of many forms of disease. To obtain the greatest value from dietetics, it is important that exact measurements and methods should be employed, and these until recently have been wanting in our hospitals. A writer in "Modern Hospital" for 1914, stated as a fact that there were only three hospitals at that date in the United States in which an exacting physician could count on having his patient placed on an accurate and scientifically arranged dietary for any considerable period of time, and in which a nurse could tell the physician exactly what his patients were getting in terms of the various elementary constituents of a dietary. The Massachussetts General Hospital was the pioneer in rendering a practical system of scientific feeding possible in general hospitals and in so doing has again placed the medical profession in its debt.

It is questionable, however, whether the profession yet fully appreciates the great importance of an exact dietary, excepting in the few diseases referred to by the writer of the article. Many of our metabolic diseases are due to the imperfect digestion or faulty assimilation of one of our food constituents, proteins, fats, or carbohydrates, and to obtain the best results in treatment care must be given to the amounts and to the proportions in which these food elements

enter into the dietary. Our present hospital diet lists are absolutely worthless for giving a physician an exact idea of the quantities or the proportions in which these elemental substances exist in the food our patient is taking. The Atwater Tables, published by the United States Department of Agriculture, present, in convenient form for reference, the exact amount of these food elements contained in our various articles of food and by means of them physicians or nurses can readily estimate how much of each constituent any given article of food contains. While laying importance, however, on the amount and composition of the food we order for our patients we must always bear in mind that dietetic treatment cannot be given mechanically; the personal element must always be taken into account. A food that might be given with advantage to a young person may not be acceptable to an elderly one; the physical condition, the previous environment and habits, the personal idiosyncrasies, and not infrequently the presence of some other disease than the specific one being treated, may render it necessary to modify considerably what might otherwise be a suitable dietary. Dietetics as a science is still in its infancy, and its problem requires much prolonged study and investigation, but we cordially welcome this new advance as one which will greatly further the possibilites for exact work and further research.

SOCIAL SERVICE AND HOSPITALS

CONSERVATION of life is a phrase often seen in print and frequently heard in discussion. At no time in the world's history could it have had a deeper meaning than at present, and every measure in our power should be used to this end. "Social service work" has been defined as "the effort of some of us to prevent the life being squeezed out of any of us!" While the rich and the poor alike are in need of conservation measures, the poor who fall a prey to illness

stand in greatest need. For many years the hospitals in our larger cities have striven almost alone to stem the tide of misery due to sickness and disease. A brief stay in the hospital during the acuteness of an illness is all that can be allowed in many instances. This sojourn, cut short with a discharge from the overcrowded wards has compelled many a patient to return home unable to obtain further care, unable to continue any further treatment, both from lack of means and from lack of knowledge of how to go on. The outpatient department service in large centres is often hurried, consisting in the making of a quick general diagnosis, the giving of a few general instructions and a prescription. How far short of efficiency the best hospital service falls in each of its departments when thus carried on is known to anyone who stops to consider, and best known to those whose work brings them in contact with the people in the large cities whose health depends in a large measure on charity or upon that service dispensed at the public hospitals. It has been truly stated concerning hospitals that "there are holes in medical work until they are filled up by knowledge of the patient's home, his worries, his ambitions and his finances." All the efforts of public or private charity, especially those displayed in hospital work should regard as important the lessening of disease not only for health and comfort, but for economic welfare and social progress as well. The aim of all hospital work should be that of the highest efficiency. We must regard the hospital as the opportunity for discovering the troubles which thousands suffer, and the place where these seek a cure, comfort or relief. As Dr. Cabot pointed put not long since, "the hospital patient's illness was often merely an incident in his *real trouble*—his ignorance, recklessness, poverty, discouragement, feeblemindedness, loneliness. His real trouble is understandable and helpable only when you know:

1. "His bodily state. (Medical diagnosis and especially prognosis.)

2. His mental state.

3. His bodily environments. (Wages, work, food, clothing, etc.)

4. His mental environments, the influence (good or bad) of his family, friends, enemies, and neutral companions."

To serve the patient in his *real trouble* the social service was organized. How such a service adds to the efficiency of any general hospital may be shown in a general way at least when one states that the causes of disease are more readily traced and determined. This is a long step in the right direction, and in a few instances it allows the prevention of the disease. Again, treatment is made more effective by means of this service. Larger numbers of patients are relieved in the wards as the stay is shortened. Homes are prepared for the patient on his return from the hospital, and cases are followed up and supervised. A third great advantage comes from this service—its educational value is felt far beyond the range of medicine. It is a *social service.* Though this movement dates back to 1905 the best hospital social service workers modestly regard themselves as pioneers. Their field is only beginning to be surveyed. In the words of Miss Ida M. Cannon, "Hospital social service work offers one of the best opportunities for general and individual education in hygiene and right living. The opportunity to interpret daily physical facts to social workers outside the hospital, to point out social facts to physicians, and to explain simple laws of wholesome living to patients, makes the hospital social worker rejoice that any knowledge she may have is not held secret in her profession. Her greatest privilege is to pass it on truthfully and generously to others."

Turning from the general to the particular in considering the hospital social service, a good illustration of how it works may be found in a discussion of social problems involved in the treatment of children with heart disease, from the point of view of the out-patient department of the Massachusetts General Hospital. In this article it is stated that Dr. Talbot's attempt to analyze the pessimistic attitude of physicians re-

garding the prognosis of heart disease in children dependent on dispensaries and hospital clinics for their medical treatment led him to the following conclusions: "Heart disease is a social disease and needs social treatment. The child and his family must be educated, his environments must be altered, and adapted to his limitations. He must be kept under supervision for a long time, not merely till he has recovered from acute symptoms that bother him, and which have made his family recognize the immediate necessity of a physician's care." The cases of heart disease as Miss Welsh points out in this discussion, divide themselves into two groups. (1) acute, (2) chronic. The former require absolute rest for a long period of time, thus involving many social problems. Hospitals were unable to allow such patients to stay as long as their illness required. Under the social service many of these children were successfully cared for at their own homes; others were attended to in convalescent homes, while a few were sent to foster homes.

The problem of educating a mother or father, or both, to understand that their child, looking and feeling so well, must refrain from doing certain things, is before the social worker, and its solution is sometimes almost impossible. Here lies the adjustment to environment so unfortunate in these cases. The child and parents alike need the training. Only by means of the social service is this possible.

It appears that home treatment, when controlled, has an advantage over that of the hospital or convalescent home.

A class most disheartening is that where there is persistent ignorance and lack of coöperation on the part of the parents, not to speak of those who are actually criminally negligent while able to bear the burden of taking care of their child.

The problem of the school is a difficult one. With better building equipment (elevators, etc.), half-day sessions and exemptions, it is partly solved. Amusements for those ill with chorea are found to be beneficial. Work with the

hands such as knitting, modeling, etc., has proved an advantage.

These children pass into the adult medical clinics at thirteen or fourteen years, and attention is given to the choice of a trade or occupation, thus anticipating a livelihood. The view of the social worker is opposed to prolonged institutional treatment except in special cases. She points out the great necessity of supervision over a long period of time, and the need for guidance in the choice of a vocation and the training for it.

Those who are urging this method have shown satisfactorily how to secure rest in bed, and practical rest during long periods in suspected and early endocarditis cases. The statistics drawn from Dr. Eustis' paper are most encouraging —yet the number of cases is far too small to carry conviction on any important point. The extension of the social service to the care of heart cases in the young marks an important advance in its ever increasing sphere of usefulness.

The efficiency of an hospital service when its social service is well organized is greatly increased. So clearly is this shown by several institutions to the south of us that we urge our Canadian hospitals to take a forward step in this direction, and plead for the setting apart of funds to make this necessity possible and save both lives and money now going to waste.

CANADIAN RED CROSS SOCIETY

THE annual meeting of the Canadian Red Cross Society was held in the Convocation Hall of the University of Toronto on January 18th. Their Royal Highnesses the Duke and Duchess of Connaught and the Princess Patricia were present, as were also the Lieutenant-Governor of the province of Ontario and Lady Hendrie. The chair was taken by Surgeon-General G. Sterling Ryerson, president of the Society. His Royal Highness the Duke of Connaught expressed his satisfaction with the work accomplished by the

Society and his conviction that the funds entrusted to it were properly expended. He also commented upon the harmonious nature of the relations existing between the Society and the St. John Ambulance Association and Brigade. The report of the Executive Committee and the financial statement having been adopted and the members of the Council elected, the President expressed to Her Royal Highness the Duchess of Connaught the desire of the Society that she should accept the office of President. This Her Royal Highness graciously accepted. The meeting concluded with a resolution, moved by Sir Adam Beck, of London, and seconded by Mr. Fred Cook, of Ottawa, "That the Executive Committee be and is hereby authorized to apply to the Parliament of Canada for such amendments of the Act of Incorporation as may be considered necessary or advisable."

The Society is particularly fortunate in having as its president Her Royal Highness the Duchess of Connaught, who ever since the commencement of the war has evinced the greatest interest in its work. The retirement of Surgeon-General Ryerson from the presidential chair, which he has filled so ably for the past two years, is a matter of regret, tempered, however, by the thought that this in no way means that his connexion with the Society will cease or that his interest in its work will be lessened, A tribute of appreciation was paid to him by the members of the Central Council at a meeting which took place on February 1st, when the following resolution was passed unanimously: "Resolved that on the retirement of Surgeon-General George Sterling Ryerson from the office of president of the Canadian Red Cross Society in order that the Society may be honoured by Her Royal Highness the Duchess of Connaught accepting that position, the Council desire to place on record an expression of appreciation of the long and active service of General Ryerson in connexion with Red Cross affairs and their administration in this country, as the original promoter of the foundation of the Society in Canada, Chairman of the Executive Committee,

Special Commissioner to South Africa representing the Canadian Red Cross Society during the Boer War and President of the Society for the last two years, he has all through been a leader in Red Cross work and has evinced great enthusiasm as well as ability in serving the Society. The Council further expresses the hope that Surgeon-General Ryerson's close connexion with the Society and the administration of Red Cross work will long continue, so that we may have the benefit of his great experience and familiarity with Red Cross matters generally." The Canadian Branch of the British National Society for Aid to the Sick and Wounded in War, as the Society was then called, was founded by Surgeon-General G. Sterling Ryerson in 1896 and was incorporated under its present name in 1909. The success it has attained has been due in large measure to the unfailing interest and active support of its founder.

THE forty-first annual meeting of the American Academy of Medicine will be held at the Hotel Statler, Detroit, on June 9th and 10th. The presidential address will be delivered by Dr. George A. Hare, of Fresno, California, and the Annual Address will be given by the Honourable Thomas Mott Osborne, of New York, who has chosen as his subject "Prison Reform". An open session will be held on the 10th, the subject of discussion being "Legislation and Medicine". On the 12th and 13th of the same month, the eighteenth annual meeting of the American Proctologic Society will be held in the Hotel Statler. Dr. T. Chittenden Hill, of Boston, will deliver the presidential address.

MISS LAURA RYERSON, daughter of Surgeon-General Ryerson, has been decorated as a Lady of Grace of St. John of Jerusalem in recognition of her "courage, fortitude and unselfish devotion in the *Lusitania* disaster". It will be remembered that Miss Ryerson and her mother were passengers

on the ill-fated vessel. Mrs. Ryerson was lost, and Miss Ryerson was thrown into the water from one of the boats. After swimming about for three hours, during which time she went down twice, she succeeded in reaching a raft on which one member of the crew was standing. He pulled her out of the water. Subsequently they caught a life boat which was drifting past and with it saved the lives of many of the women who were clinging to preservers. When they were taken from the lifeboat to the destroyer which rescued them, Miss Ryerson undressed the women, wrapped them in blankets and attended to them.

Dr. F. H. Sexton, of Halifax, Nova Scotia, has been appointed by the Military Hospitals Commission vocational officer for Quebec and the Maritime Provinces. A number of people have offered to give free instruction to disabled soldiers and, under the direction of Dr. Sexton, arrangements have been made for instruction in mechanical drawing and arithmetic, and in English for the French-Canadians who wish to learn that language. The number of men who are so disabled as to be incapable of resuming their former occupation is small and in many cases it will be necessary to give a man individual instruction in the craft he desires to learn. Up to the present, with the assistance of employers, the Provincial Employment Bureaux have been able to find work for all those who have been discharged as unfit for further service. Of course, a few cases have occurred in which the men were unwilling to work.

The knowledge of the deplorable shortage of medical men with our troops in Mesopotamia will be a further incentive to the doctors of Canada to join the colours and, in all probability, some of those now practising in rural districts will go overseas. In the middle west, where in some districts at the present time the nearest doctor resides eighteen or twenty miles

away. A similar condition exists in Nova Scotia and reference to the matter was recently made by Premier Murray, who stated that in the whole of Victoria County there was only one medical practitioner and that in many places throughout the province it was impossible to obtain adequate medical treatment. Such a state of affairs offers a splendid opportunity to the charlatan, the vendor of secret remedies, or the professed performer of marvellous cures; and he has not been slow to seize his chance. In one case, a negro "doctor" was charged at the instance of the Alberta Medical Society with practising medicine at various rural points on the Battle River. He claimed to be the possessor of a wonderful secret remedy, for which he had been offered the sum of $50,000 by certain Edmonton doctors! It was stated by one witness that he had charged the exorbitant fee of $25 for a single treatment. A fine of $50 and costs was imposed.

THE appointment of a new board of health in Manitoba, with Dr. Gorden Bell as chairman, is announced on another page of this issue. The first meeting of the board took place on April 11th, when two questions of great importance to the people of the province were considered—the water supply, and the care of indigent cases of tuberculosis. Dr. Bell was empowered to arrange for an investigation of all the public water supplies in the province. Such an investigation, naturally, will take some time, but when the report is submitted the board will no doubt be in a position to enforce the regulations necessary to ensure an improvement in this direction. As for the indigent cases of tuberculosis there are a number of people in the province who are in poor circumstances and who are suffering from this disease, for whom no sanatorium accommodation is available. The Ninette Sanatorium is now being enlarged but the new wing will not be completed for some months; meantime all these patients constitute foci of infection. A committee was appointed to

discuss the matter with the authorities of the sanatorium and to see whether tents could be erected to accommodate these patients at least during the summer. Another committee was appointed to take up with the Board of Education the question of infection in the schools. Other matters were discussed, among them the inspection of abattoirs. The Board will meet four times each year. A committee composed of Dr. Bell, Dr. Fraser, Dr. Cadham, and Dr. E. W. Montgomery will meet from time to time as occasion demands.

A CONFERENCE on the Training of Medical Missionaries was held in New York on April 5th and 6th, under the presidency of Rev. W. Douglas Mackenzie, D.D., president of the Hartford Theological Seminary and chairman of the Board of Missionary Preparation. This Board represents the foreign mission interests of North America in an attempt to standardize all kinds of missionary preparation. Its efforts have met with reasonable success so far as theological training, educational service, and the training of women for their peculiar tasks on the mission field are concerned, and an attempt is now being made to formulate a high working standard for all who are looking forward to medical mission service. Among the papers read at the Conference the following were of particular interest to the profession: "The different types of medical service called for in the foreign field and the personal qualifications essential to success," by Dr. Alden R. Hoover, missionary of the American Board in Turkey; "The preparation of the medical missionary for his task," by Professor H. D. Arnold, M.D., dean of the Graduate School of Medicine in Harvard University; "The preparation of women for medical mission service and how it should be differentiated, if at all, from that of men," by Dr. Belle Allen, missionary in Baroda, India; "The preparation which medical missionaries should have in addition to their regular medical studies," by Dr. Paul W. Harrison, missionary in Arabia. A résumé of

the report of the Committee on Findings will be published in a later issue of the JOURNAL.

THE report of the first year's work of the Khaki League has now been issued. This League was organized in Montreal in February, 1915, and was the result of a realization of the necessity of providing some suitable place where soldiers preparing to go overseas might spend their time when off duty. The first step taken was the establishment of clubs for the men, who soon expressed their appreciation by their attendance and exemplary conduct. The movement proved so successful in Montreal that Khaki clubs were formed in other places, and particular mention might be made of the one at the Valcartier Camp. The Executive of the League then proceeded to make arrangements for the reception of wounded soldiers on their return to Canada and Convalescent Homes were established, equipped with all necessities including massage and electrical appliances, and provided with a housekeeping staff and a nursing staff organized under the voluntary medical aid system. In May, 1915, these homes were placed under the jurisdiction of the Military Hospitals Commission.

Later, the efforts of the League were directed also to the welfare of the returned soldier while on his way home from the Discharge Depot. These men, some severely wounded, others suffering from shock or other nervous conditions, frequently found themselves in a strange city with nowhere to go, save the saloon. A soldiers' club was therefore established in Montreal, provided with sleeping accommodation for men who were passing through and with reading, writing, dining, card and billiard rooms; and it soon became the rendezvous not only of those who had seen active service but also of those who were preparing to go overseas. Similar clubs have been established in other cities and are doing splendid work. The League also lends its assistance to the

Commission charged with the provision of employment for returned soldiers. It has met with the generous support of the public and the services of the profession have been given gratuitously. In many cases the families of wounded soldiers have also been attended free of charge.

The following are the statistics for 1915 of the Montreal Khaki League: No. of patients received at Khaki Homes, 203; patients discharged, 125; number of patients in homes December 31st, 1915, 78; number of hospital days of treatment, 3,817; number of "transient" wounded cared for, 881; number of nights of accommodation given at the Khaki Club, 720; number of positions found for returned soldiers, 85.

THE report of the Committee appointed by the British Government to investigate the conditions at the Wittenberg camp during the epidemic of typhus in the early part of 1915 constitutes further proof, if such were needed, of the brutal inhumanity of the German exponent of *Kultur*. A mass of corroborative evidence has been obtained from reliable witnesses which makes it impossible to harbour any doubt of the almost unbelievable cruelties practised by the Germans on those who have fallen into their hands as prisoners, and the hatred manifested toward the British prisoner has been particularly vehement. The testimony of Major Priestley, Captain Vidal and Captain Lauder, of the Royal Army Medical Corps, is a sad commentary on the vaunted civilization of the present century with its scientific achievement and upon the courage of the German medical profession. On the outbreak of the epidemic the German staff, medical as well as military, fled, leaving the sick to their fate. Six British doctors, Major Fry, Major Priestley, Captains Sutcliffe, Field, Vidal, and Lauder, who had been detained at Halle in defiance of the Geneva Convention, were sent to Wittenberg. The conditions they found there are indescribable but can well be imagined. Major Fry, Captain Sutcliffe, and Captain

Field lost their lives in attempting to alleviate the sufferings of others and Captain Lauder fell ill, but recovered and when convalescent resumed duty. The mortality was not so great among the British as among the Russians and French, but 60 died of the 250 to 300 cases among the British prisoners. The utter callousness of Dr. Aschenbach, the German medical officer in charge, is hard to believe, but the malicious hatred expressed in the words "Schweine Englaender" leaves no room for doubt as to his attitude. Unfortunately, Wittenberg is by no means the only camp where such conditions existed, as a perusal of Dr. Francois Léonetti's "Souvenirs de captivité" will show. At the Gastrow camp, in Mecklenburg, in January, 1915, the prisoners, 19,000 in number including 1,000 British, were in tents without sufficient protection from cold and wet, suffering from hunger and infested with vermin. The sanitary conditions were of the worst kind and no precautions were taken against disease. Even their clothes were taken away from the British. Typhus fever raged in this camp for five months. At first the medical service consisted of two German students. Later on the conditions were improved. At Langensalza, in Thuringia, and at Niederzwheren, in Westphalia, Dr. Léonetti found things equally bad. On his arrival at the latter place he found 6,000 sick, and even the mattresses and blankets were taken away from the men who had to lie on bare boards. From the beginning of May to July 14th, 2,600 deaths occurred among the prisoners at Niederzwheren, and the General in command said quite frankly that he was making war in his own way and that a dead prisoner meant one ration less. It is due largely to the efforts of the American Embassy that some improvement has been made in the conditions in the German camps and in some cases the situation is now described as satisfactory. A good deal of course depends upon the character of the commandant and, in some cases, the trials to which prisoners of war have been subjected have been the result of mismanagement and incompetency rather than intentional brutality.

Book Reviews

PAINLESS CHILDBIRTH EUTOCIA AND NITROUS OXID-OXYGEN ANALGESIA. By CARL HENRY DAVIS, M.D., associate in obstetrics and gynæcology, Rush Medical College. Chicago, Forbes and Company, 1916. Price, $1.00.

This small book is built around the sentence in which is summed up the author's belief founded upon a series of one hundred and fifty-four consecutive deliveries, under the influence of nitrous oxid-oxygen analgesia:

"The nitrous oxid-oxygen analgesia is absolutely safe in the hands of any physician who understands the practice of obstetrics, and perfectly administered will relieve the suffering in every case in which it is used."

The book is interesting and contains a very clear description of the method of employing nitrous oxid-oxygen in obstetric work. There is an interesting chapter on unnecessary mortality in obstetrics which is well worth reading.

Dr. Davis has added to obstetric literature a valuable, though modest contribution on the subject of analgesia, or obstetric anæsthesia.

MODERN MEDICINE. Its theory and practice in original contributions by American and foreign authors. Edited by SIR WILLIAM OSLER, BART., M.D., F.R.S., regius professor of medicine in Oxford University, England., and THOMAS MCCRAE, M.D., professor of medicine in Jefferson Medical College, Philadelphia. Second edition, thoroughly revised. Vol. V., Diseases of the nervous system—Diseases of the locomotor system. Lea and Febiger, Philadelphia and New York, 1915.

This, the Fifth Volume of the new edition of Osler's "System of Medicine," is devoted chiefly to the Nervous System, and the editors have succeeded in obtaining the collaboration of the very best authorities on nervous diseases.

The Introduction, by Dr. Barker, gives in a very contracted form a lucid interpretation of the various general disturbances of the nervous system, and both for the general practitioner and the

student of medicine, presents this subject so concisely as to make it attractive to the reader who is desirous for the most recent information on methods of examination.

Dr. C. K. Russel contributes a short article on the combined system-diseases, which is a valuable contribution to the book; while the article by Dr. Cushing on Tumours of the Brain and Meninges, is in itself a monograph which brings us abreast of the times with this most important subject.

Some of the very best authorities from Great Britain have been selected as authors, and we welcome the names of Bramwell, Buzzard, and Gordon Holmes.

Dr. Thomas McCrae has contributed, with his usual lucidity, a most complete article on Arthritis Deformans, upon which subject he speaks with authority. The illustrations throughout the book are generous and for the most part very satisfactory.

All in all, one has here in concise form, a most satisfactory interpretation of nervous diseases, which is useful both to the teacher and the practitioner.

SENESCENCE AND REJUVENESCENCE. By CHARLES MANNING CHILD, of the department of zoology in the University of Chicago. The University of Chicago Press, Chicago, 1915. Price $4.00 net.

A very important contribution to biological theory, based primarily on the author's searching experiments with planarian worms, but with wide comparison of the work in the field both on animals and plants.

The main purpose of the book is to support the thesis that change in the rate of metabolism is at the bottom of senescence and rejuvenation, indeed that "senescence is a decrease and rejuvenescence an increase in the rate of metabolism associated with changes in the cellular substratum which themselves result from the relation between substratum and metabolism." Fundamentally this relation may lie in the nature of the colloids composing the living substance, a gradual coagulation of these, such as is known to occur in emulsion colloids even when temperature and other conditions are constant, leading to increased metabolic stasis. It is evident that in this lies an important stimulus for further research on the lines indicated by the work of Lepeschkin, Borowikov and Fischer.

The experimental basis of the author's discussion is to be found in his very interesting and important method of correlating the

degree of metabolism with the age of the organism. This was done by subjecting old individuals and young derived agamically therefrom, to poisons (cyanides especially) and narcotics, and finding that, on the one hand, youth and high susceptibility and, on the other, age and low susceptibility go together; and that susceptibility varies directly with the rate of metabolism. Herein is therefore a physiological test for age.

Increasing age is associated with increase in metaplasmic materials. The reversal of this process should therefore constitute rejuvenescence. This conception has been tested by forced reduction of metaplasm by starvation (of planaria), during which reduction in size of the organism and the even complete disappearance of some organs may occur, due to the reëntrance of structural material into the metabolic stream. Experimentally it was shown that with partial starvation individuals remain physiologically young and active for a least three years, while the well-fed pass through a whole cycle from cyst to cyst in three to four weeks.

The complex body is found to possess various degrees of metabolic activity arranged along gradients, highest at the head, back and midline and decreasing towards the antipodes of the longitudinal, vertical and transverse axes in the planarians. The parts of higher metabolism exert a dominance over the others, which, upon isolation, are released from the inhibition and proceed to form parts which they would otherwise not. Here is shown a fundamental similarity between animals and plants. The nature of the control is yet a matter of speculation.

Sexual reproduction is a rejuvenation process. The gametes are senescent cells, the male especially betraying this condition in its complex structure.

The union of the gametes, as held also by Minot, is a rejuvenation-starting process, the oosperm becoming young. This is in accordance with the author's view of conjugation in the lower forms, and is the reverse of the more generally accepted notion, for which Weissmann has been protagonist, of the immortality of protoplasm. Even the unicellular forms grow old and would die but for rejuvenation processes.

The above very brief and inadequate review indicates only the general scope and nature of the field of work and thought which it exposes. It will certainly interest the thoughtful student of human, as well as general physiology, for the data on which the discussion rests are derived as well from man as from other animals and plants. It is a notable contribution of very original character, which must stimulate further work.

THE WORK OF OUR HANDS. A Study of Occupations for Invalids. By HERBERT J. HALL, M.D., and MERTICE M. C. BUCK. Publishers: Moffat, Yard & Co., New York, 1915.

This volume should be in the hands of every one who is interested in relieving those of our soldiers returning from the front who unfortunately by injuries received have been incapacitated from following their previous occupation. The idea of work for those thus handicapped, both as a remedy against the development of laziness and mental degeneration, and as a means of partial self-support, is attracting much attention in England and France. In both countries many institutions have been and are being established in which shoemaking, book-binding, harness making, tailoring, basketry, matting, weaving, bookkeeping, etc., are efficiently taught. Thousands of men, especially in France, have through the teaching and training obtained in these schools acquired sufficient skill and knowledge to render themselves partially or entirely self supporting for the rest of their lives. Irrespective of the war there are many hundreds of men and women who on account of some illness or injury are doomed to a life of more or less dependence upon others. The man out of work because of bad times is badly enough off, but what of the man or woman who, owing to some crippling or disfigurement, has litle hope of ever working again? Imagine the despair and mental degeneration which in such a one must tend to sap all that is brave and good in life.

The present volume is a study of suitable occupations for those invalided and the best methods of teaching them, and very well covers all the ground. It is well written and well illustrated.

HARVEY'S VIEWS ON THE USE OF THE CIRCULATION OF THE BLOOD. By JOHN G. CURTIS, M.D., LL.D., late professor of physiology in Columbia University, New York. Price $1.50 net. The Columbia University Press, New York, 1915.

The story of William Harvey and his discovery of the circulation of the blood, and the true part which the heart plays in that circulation, must always be to every physician most interesting. "To medical practice it stands much in the same relation as the discovery of the mariner's compass to navigation; without it the medical practitioner would be all adrift. . . . The discovery is incomparably the most important ever made in physiological science, bearing and destined to bear fruit for all succeeding ages." Three hundred years ago, Tuesday, Wednesday and Thursday, April

16th, 17th and 18th, A.D. 1616, Harvey's first course of lectures on anatomy were delivered at the Royal College of Physicians in London. The special treatise on the circulation of the blood, which gave new life to the medical thought of the time, was not published till sixteen years later. The volume before us, written by Professor J. G. Curtis of Columbia University, before his death, is an attempt to put some of Harvey's statements in a truer light, than does the old translation of Willis. It is a work of love and reverence for an old master, and represents a profound study of Harvey's ideas, presenting a comparison of them with the views of his more important predecessors. He recognizes Harvey rather as a disciple of Aristotle than of Galen, and gives to the former credit for many observations which unfortunately for medicine were afterwards overlooked. This small volume is well printed and forms very pleasant reading matter for all interested in the historical side of medicine.

Books Received

The following books have been received and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.

THE NEW PUBLIC HEALTH. By HIBBERT WINSLOW HILL, M.B., M.D., D.P.H., late director, division of epidemiology, Minnesota State Board of Health, and later executive secretary, Minnesota Public Health Association. 206 pages. New York: The Macmillan Company, 1916.

MANUAL OF VITAL TESTING METHODS. By WILFRED M. BARTON, M.D., associate professor of medicine, Georgetown University. 255 pages. Boston: Richard G. Badger. Toronto: The Copp Clark Co., Limited, 1916. Price, $1.50.

NERVOUS CHILDREN PREVENTION AND MANAGEMENT. By BEVERLEY R. TUCKER, M.D., professor of neurology and psychiatry, Medical College of Virginia, Richmond, Va. 147 pages. Boston: Richard G. Badger. Toronto: The Copp Clark Co., Limited, 1916. Price, $1.25 net.

PROGRESSIVE MEDICINE: A QUARTERLY DIGEST OF ADVANCES, DISCOVERIES AND IMPROVEMENTS IN THE MEDICAL AND SURGICAL SCIENCE. Edited by HOBART AMORY HARE, M.D., professor of therapeutics, materia medica, and diagnosis in the Jefferson Medical College, Philadelphia; assisted by LEIGHTON F. APPLEMAN, M.D., instructor in therapeutics, Jefferson Medical College, Philadelphia. Vol. I, March, 1916. SURGERY OF THE HEAD AND NECK—SURGERY OF THE THORAX, INCLUDING DISEASES OF THE BREAST—INFECTIOUS DISEASES, INCLUDING ACUTE RHEUMATISM, CROUPOUS PNEUMONIA, AND INFLUENZA—DISEASES OF CHILDREN—RHINOLOGY AND LARYNGOLOGY—OTOLOGY. Lea and Febiger, Philadelphia and New York, 1916. Subscription price, $6.00 per annum.

DIAGNOSTIC METHODS: CHEMICAL, BACTERIOLOGICAL AND MICROSCOPICAL. A Text-Book for Students and Practitioners. By RALPH W. WEBSTER, M.D., Ph.D., assistant professor of pharmacological therapeutics and instructor in medicine in Rush Medical College, University of Chicago. Fifth edition, revised and enlarged with 37 coloured plates and 171 other illustrations 758 pages. Philadelphia: P. Blackiston's Son & Co., 1012 Walnut St., 1916. Price, $4.50 net.

THE PRACTITIONER'S MEDICAL DICTIONARY, CONTAINING ALL THE WORDS AND PHRASES GENERALLY USED IN MEDICINE AND THE ALLIED SCIENCES, WITH THEIR PROPER PRONUNCIATION, DERIVATION, AND DEFINITION. By GEORGE M. GOULD, A.M., M.D., author of "An Illustrated Dictionary of Medicine, Biology, and Allied Sciences". Third edition, revised and enlarged, 962 pages. By R. J. E. SCOTT, M.A., B.C.L., M.D., fellow of the New York Academy of Medicine. Based on recent medical literature with many tables. Philadelphia: P. Blackiston's Son & Co., 1012 Walnut St., 1916. Price, $2.75 in cloth.

Res Judicatæ

THE RELATION OF "SANITATION" TO DEATH AND DISEASE

By H. W. Hill, B.A., M.D., D.P.H.

Director, Institute of Public Health, and M.O.H., London, Canada

THE subject of this communication forms the root of many questions modern public health has been trying so hard to answer of late years; first, what are *the* economic, efficient, procedures of real public health; second, what can we discard with profit from our old armamentarium; third, what new public health procedures should be adopted?. I intend to discuss here chiefly the second, i.e., what can we discard?

The earlier conceptions of public health indentified dirt with disease, holding that one made, or included in some way, the other. But as we go deeper and deeper into the real causes of disease, direct or indirect, dirt loses significance more and more, and we recognize that the saying, "Dirt causes disease," is one of those glittering generalities that really mean nothing or is even false.

We repeat, some of us often and as a public health maxim, "Cleanliness is next to godliness." But is it? In what public health sense is that saying true? This phrase on the surface seems to mean, is certainly usually used to mean, that cleanliness protects against disease; and that the protection is so good as to rank below nothing but godliness. But who would dare to claim godliness protects against sickness at all? Does the unvaccinated bishop escape smallpox or the vaccinated burglar succumb?

Are the ninety per cent. of our people who suffer from measles all godless? We average by the time we reach adult life over three infections apiece, counting only the accepted children's diseases! Are children more godless than adults? Godliness is no protection provided infection can reach us. Ungodliness does not produce disease, provided infection is excluded. It was not the heathen who suffered syphilis, tuberculosis; they were free until Christian nations, wallowing in both diseases, brought both to them. Then if godliness is *no* protection, why is cleanliness lauded as being almost as good, since that merely means cleanliness is almost as good as zero!

These remarks are mere introductory generalities; my real object is to present the findings of an Ontario health officer, Dr. G. A. Dickinson. He prepared very admirable statistics of the infractions of the sanitary code in his town, Port Hope, and at my suggestion divided the deaths and diseases of his town according to the condition of the premises where they occurred, putting together in one group all premises showing infractions of the sanitary laws, and in the other all premises showing obedience.*

If it is essential to health and long life that all manure piles should be covered, all garbage collected, all privies kept in a sanitary condition (whatever that means), no water in the cellar and so on, surely the deaths and disease amongst the law-breakers should be higher than amongst the law-keepers. If our sanitary code is really sacred, as it is often regarded; if it has the real weight of ripe years of well-checked-up experience; if it is truly physically harmful to break its injunctions, if it is really protective to keep them; then the distribution of death and disease should show some relation to the two groups, the law-keepers on one side, the law-breakers on the other.

We are not disappointed; a relation, at least on the surface does appear; it is this: The law-keepers have in proportion about one third more deaths than the law-breakers, and over twice as many cases of infection! The actual figures were as follows: From 303 dwellings showing various infractions there were 13 deaths and 13 cases of communicable diseases; while from 901 dwellings showing no infractions there were 52 deaths and 89 cases of communicable diseases. In other words for every 100 deaths and every 100 cases amongst the law-*breakers* there would be, in proportion, 135 deaths and 232 cases amongst the law-*keepers!*

So if we insist on any relation at all, if we claim that the sanitary code affects death and disease, we must on this showing admit its relation to be that of increasing, not diminishing, both; and increasing both very markedly! Where lies the fallacy? Dr. Dickenson has searched for it carefully and found none, nor any explanation for the figures at all. The premises showing infections were scattered at random all over the town, not grouped in any one "unsanitary" neighbourhood. The people who lived in those premises were the average citizens, no better or worse or richer or poorer than the others. The reporting of deaths and disease was equally good for both groups. I know of no similar

*Dr. G. A. Dickinson presented his results at the Ontario Medical Officers Health Convention, May 7th and 8th, 1913, Toronto.

figures, because health officers generally do not ask themselves if their work means anything; do not try to figure profit and loss.

Once as a boy of eighteen I taught in a private school which the principal kept up year by year because he believed it to be the chief source of his living. I also assumed that it paid, and taught on, blandly confident; never questioning that the school was financially sound and yielded a very good income.

One day, merely to occupy time, I figured the actual difference of income and outgo. I found, to the principal's dumbstruck amazement and horror, and mine also, that he lost just one dollar a month every month that this school ran!

Let me say in all earnestness, that public health work, too often, is in much that exact situation.

We are making expenditures, working hard, fining our people for breaking the sanitary code, preaching cleanliness, fighting dirt. It all sounds so good, so heroic, so righteous, so self-sacrifising. As a matter of fact, is not much of our teaching, not righteous but rather self-righteous? Does our much vaunted cleaning up really accomplish the only real end we can have; does it really reduce death and disease? Are we not exactly in the position of a business man who never takes stock of his business? He inherits, let us say, certain customers, goodwill, traditions. He always has goods on his shelf, people buying, bills being paid. He ranks with his neighbours as solvent; he thinks he is so himself. Yet enquiry, checking up, cold-blooded figuring, may show it is really much cheaper for him to stop buying and selling; cheaper to do nothing at all!

That cold-blooded taking of stock is just what we need now in public health, and I would here urge two things to this end; first the use by all health boards of the financial scheme of accounting put forth by M. N. Baker, the noted engineer, publicist, and member of the committee of financial accounting of the Massachusetts Association of Boards of Health. This is the first step; it determines what boards expend for each item of what we call public health service. This form of accounting is wise from the mere standpoint of good business; if adopted widely it would make cost comparisons in different places more easy. Above all it would call attention to what we waste for æsthetics or preventing nuisance, as against what we spend for the real reduction of death and disease.

My second suggestion is this; in addition to this uniform *financial* accounting, every department of health, every health officer, should so keep his records as to yield a uniform *technical*

accounting; thus showing not only what each branch of his work costs in cash, but what it returns, not in cash of course, but in saving of death and disease. I suggest for this form of accounting, but merely as a beginning, the tabulation of death and disease in the community against the infractions of the sanitary code, following in this the plan followed in Port Hope. For the technical accounting all that is essential at present is listing all infractions of the sanitary code found on dwelling premises; listing the deaths and diseases found on the same premises; dividing the total deaths on those premises by the total of those premises; doing the same with the diseases reported; and comparing these figures with similar figures from the rest of the community, the law-keeping portion.

Other methods for studying such figures will quickly suggest themselves; each individual death or case of disease may be tabulated against the individual infraction of the code which occurred on the premises concerned, and so on. But in any case do as is here suggested for a beginning.

Let me say that I am not indicting the requirements of the Sanitary code; they are good rules for community living; not do I deny that, at times, some of the things they forbid are factors in the spread of disease. What I insist on is this; having limited time, money and energy for public health service in most places, it is the acme of folly to spend most of that little upon the least paying procedures instead of the best. If you were in a burning building trying to help the poor inmates, what folly to throw the baby out of the window and carry an old can of garbage carefully down in your arms!

Just that in essence, nothing better, makes up one-half of our present day health work.

Nuisances, unæsthetic conditions, even such matters as really at times may be factors in the spread of disease, should be classed in police work, so long as they constitute simple infractions of simple and definite civil laws.* Public health men have their hands quite enough filled in searching for, dealing with, the infractions of Nature's laws which they encounter. The tracing of disease through its routes to its sources, the care of those sources to prevent further spread of disease; the study of health in the human, the securing thus of health for the race,—these are far more well worth our doing than fussing with untidy backyards or forcing

*Amongst those which have some bearing on the reduction of death and disease, I would class prevention of fly-carriage of infection, by screening all outdoor toilets, or better, by substituting for them toilets connected with a sewer.

unwanted æsthetics on people, who are dying for lack of real care.

The public health man is investigating something or somebody always. Let us take time to investigate ourselves. If we find our old methods are efficient in reducing death and disease, then let us go on with old methods; but if we find they are traditions, meaningless old wives' fables or worse, let us drop them and do something useful; or let us go out of the business.

Obituary

Dr. Bartholomew Edwin McKenzie, of Toronto, died April 21st, after a brief illness. Dr. McKenzie was born at Oak Ridges, Ontario, in 1851 and was educated at the Cobourg Collegiate Institute. In 1877, he graduated in arts from Victoria University and was awarded the silver medal for mathematics; he then entered the medical faculty of McGill University and in 1880 received the degrees of M.D., C.M. He subsequently did post-graduate work in London, Glasgow, Berlin and Vienna. Dr. McKenzie was in general practice at Toronto for a few years. He then began to devote his attention to orthopædics, being one of the first Canadian surgeons to take up this particular branch of medicine as a specialty, and soon came to be recognized as an authority on the subject. A few years later the Toronto Orthopædic Hospital was founded by him and he remained actively connected with its work until his illness. For a number of years Dr. McKenzie occupied the chair of clinical surgery at the Medical College for Women, and in 1905 he was elected President of the American Orthopædic Association. He contributed from time to time to the medical literature and several articles from his pen have been published in the Journal. Throughout his life, Dr. McKenzie was an ardent advocate of temperance and at the last provincial elections contested the seat for the north-east riding of Toronto with Dr. Pyne but was defeated on the "banish-the-bar" issue. He leaves a widow and three sons, all of whom are on active service.

Lance-Corporal Robert Gordon Caldwell Stewart, M.D., of Kingston, died at the Toronto General Hospital on March 29th, from the effects of a wound received at the battle of St. Julien, in April, 1915. Dr. Stewart graduated from the University of Dalhousie, Halifax. When the war broke out he was engaged as a physician on the Canadian Northern Railway, and held the military rank of sergeant-major in the 48th Regiment of Toronto. Giving up both professional and military standing, Dr. Stewart enlisted as a private in the 15th Battalion, Highlanders, Toronto, and went to the front. He was soon promoted to be lance-corporal. At St. Julien, as he was attending to the wound of a comrade whose arm had been shattered by a bursting shrapnel shell, a rifle bullet penetrated the back of his head and came out at the corner of his left eye. For seven weeks he was deaf, dumb, and blind, but as the effects of shock wore off, he recovered his hearing and speech, and finally the sight of his left eye was restored. He returned to Canada and underwent an operation in the hope that the sight of the other eye might be regained so that he could return to the front. His death occurred two days later.

Major Paul A. Gillespie, M.D., of the South African Expeditionary Force, German West Africa, died of bubonic plague on March 24th, at Winburg, South Africa. Major Gillespie, who was in the forty-ninth year of his age, was born at Cannington, Ontario; he was educated at the Jarvis Collegiate Institute, Toronto, and received his medical degree from the University of Toronto in 1890. After practising for six years at Penetang, Ontario, Dr. Gillespie went to South Africa and took up a practice at Winburg. During the South African war he served in the Army Medical Corps under General Botha, with the rank of captain. At the commencement of the present campaign in German West Africa he again offered his services. He was gazetted major, and served under General Smuts until he was stricken with plague. On one occasion Major Gillespie was taken prisoner and held as a British spy. He was to be shot but, fortunately, the town in which he was prisoner was captured by the British before the sentence could be carried out.

Dr. William Woodbury Doherty, of Rexton, New Brunswick, died of pneumonia, March 26th, in the fifty-sixth year of his age. Dr. Doherty was born at Rexton in 1861 and graduated from McGill University in 1885. He practised for some time at Campbellton, New Brunswick.

Dr. John Sinclair died at Minneapolis, Minnesota, April 6th, in the eightieth year of his age. Dr. Sinclair was born near Montreal. He practised at St. Marys, Ontario, from 1866 to 1893. He then went to St. Thomas, North Dakota, where he continued to practise for some time.

Dr. Matthew L. MacFarland, of West St. John, New Brunswick, died suddenly April 12th. Born at Whitehead, King's County, of Irish parentage, Dr. MacFarland graduated from the Harvard Medical School in 1872. He went into practice at St. John and a few years later moved to Fairville, where he continued to practise for twenty years.

Dr. T. H. Jamieson, of Campbell River, British Columbia, died April 9th. Dr. Jamieson graduated from Queen's University in 1906 and shortly afterwards went into practice at Campbell River.

Dr. Charles Marcus Sanford, of Brighton, Ontario, died April 11th, in the fifty-fourth year of his age. He graduated from Trinity Medical College, Toronto, in 1886, and had been in practice at Brighton for twenty-five years.

Dr. Walter Russell Thomas, of Valleyfield, Newfoundland, died April 8th. Dr. Thomas graduated from McGill University in 1886.

Dr. Henri Prevost, of St. Jerome, Quebec, died April 21st, in the fifty-fourth year of his age. Dr. Prevost graduated from Laval University and had practised at St Jerome for twenty-seven years.

News

MARITIME PROVINCES

The Victoria Hospital, Fredericton, is to be enlarged by the addition of a new wing, the gift of the late Mr. Donald Fraser. It is hoped that the building will be completed during the present year.

ARRANGEMENTS are being made for the erection of a new isolation hospital at St. John in place of the building which was recently destroyed by fire. Temporary accommodation for patients will be provided until the new building is ready for occupation. There were no patients in the hospital at the time of the fire.

ONTARIO

THE epidemic of measles seems to have reached its height during March, for 5,158 cases of this infection were reported in the province during that month. The number of cases reported in February was 2,793. Cases of measles have been unusually numerous throughout the Dominion during the past few months and although many of them have been slight, a number of deaths have occurred. The following is the list of communicable diseases reported during March in the province of Ontario: scarlet fever, 252 cases, 11 deaths; diphtheria, 265 cases, 23 deaths; measles, 5,158 cases, 47 deaths; smallpox, 32 cases; whooping cough, 283 cases, 13 deaths; typhoid fever, 74 cases, 24 deaths; tuberculosis, 182 cases, 120 deaths; cerebro-spinal meningitis, 34 cases, 20 deaths.

THE Orillia General Hospital is to be enlarged. A new operating room is to be built and extra accommodation for patients provided.

THE plans have been prepared for an addition to the Essex Tuberculosis Hospital at Union-on-the-Lake. The necessary funds have been provided by Mr. Gordon McGregor, manager of the Canadian Motor Company.

DR. A. W. KAY, resident physician-in-chief at the Victoria Hospital, London, has been appointed medical superintendent of St. Luke's Hospital, Ottawa.

A BILL to enable the town of Ingersoll to sell the residence of the late Dr. Carroll was recently brought before the Private Bills Committee in Toronto. The late Dr. Carroll bequeathed his residence to the corporation with the request that it be converted into a Protestant hospital for sick children; he also left certain property which was to form a park. As, in the opinion of the corporation of Ingersoll, neither the residence not the property was suitable for the purpose for which it was bequeathed, permission was sought

to dispose of them and with the money obtained through the transaction to add a wing to the Ingersoll Hospital and to purchase ground more suitable for a park. Objection, however, was made by the heirs of Dr. Carroll and, finally, it was agreed that the terms of the will should be fulfilled. The residence, therefore, will be converted into a Protestant Hospital for Sick Children and will be maintained partially out of a fund of about $12,000 bequeathed for that purpose.

QUEBEC

It is the intention to open a ward in the Jeffery Hale Hospital, Quebec, for patients suffering from tuberculosis. During the six months ending March 31st, 1916, forty-five patients were admitted to the hospital.

During the six months ending March 31st, 1916, 45 patients were admitted to the new Civic Hospital at Quebec; and 633 days' treatment were given at a cost of $2,145.28.

MANITOBA

The following members of the Provincial Board of Health were appointed by order-in-council on April 4th,—Dr. Gordon Bell, chairman and provincial bacteriologist, Dr. M. Stuart Fraser, provincial epidemiologist, and Dr. F. T. Cadham, assistant to Dr. Gordon Bell. Lectures on epidemiology, illustrated by moving pictures and models, will be given throughout the province by Dr. Fraser. In addition to these active members of the Board of Health, the following members constitute an advisory board: Dr. E. Bottomley, of Dauphin; Dr. I. L. McInnis, of Neepawa; Dr. E. W. Montgomery, of Winnipeg; Dr. J. N. Little, of Killarney, and Mr. S. E. Lang, school inspector of Winnipeg. Three nurses will be appointed shortly to assist the Board of Health, particularly in the work undertaken in the public schools.

Dr. Angus Tyndall Condell has been appointed coroner for Brandon, in succession to Dr. L. M. More, resigned.

During the month of February, 550 cases of communicable disease, resulting in 25 deaths, were reported in the city of Winnipeg. Among them were 307 cases of measles, and 101 cases of

diphtheria. In February, 1915, 606 cases and 31 deaths were reported.

DR. J. A. MCARTHUR, of Winnipeg, has been appointed jail physician for the eastern judicial district to succeed Dr. A. D. Carscallen. Dr. Jeremiah Simpson Clark, of Brandon, is appointed jail physician for the western judicial district, an appointment recently held by Dr. More.

BRITISH COLUMBIA

DR. CHARLES ALBERT ARNOTT, of Greenwood, has been appointed coroner.

THE estimates recently passed in the provincial legislature include a grant of $20,000 to the Vancouver General Hospital. Part of this money will go towards the new surgical wing which is in course of construction.

DR. MCBURNEY, of Murrayville, has been appointed medical inspector of schools at Langley.

MEDICAL COLLEGES

McGill University.

A SUMMER session will commence on May 1st, in order that the fourth year medical students may complete their course and receive their degrees in the autumn, when they will offer themselves for overseas service in the Army Medical Corps. The fifth year students who recently returned from the front will graduate in July.

Toronto University.

THE fourth year students in the medical faculty will attend a summer session from May 1st to November 30th, and there will be no fifth year course given during the next academic year. About sixty men will attend this summer course and, upon graduation, will enlist for overseas service.

Queen's University.

A SUMMER session will be held for medical students of the 2nd, 3rd, 4th and 5th years to enable them to finish their studies as

quickly as possible so that they may offer their services as qualified practitioners to the military authorities.

Dalhousie University.

THE Faculty of Medicine of Dalhousie University at a recent meeting sanctioned the inauguration of a course of lectures on Medical Ethics and Etiquette. The lectures, which were open to students of the final year only, were three in number as follow: (1) The relations of the practitioner to the patient, by Professor D. Fraser Harris, M.D., D.Sc.; (2) The relations of the practitioner to his brother practitioners, by Professor W. H. Hattie, M.D., C.M.; (3) The relations of the practitioner to the public, by J. J. Macdougall, Esq., M.D., C.M.

The Faculty was of the opinion that there was much need for such instruction, that unfortunately in some cases the "light of Nature" alone was not sufficient to illuminate all the dark places of medical relationships. Some years ago at the University of Birmingham, in England, Professor Robert Saundly, at that time in the Chair of Medicine, delivered during two summer sessions a short course of lectures on Medical Ethics which were later published in book form. In Paris a course of lectures called "Medical Deontology" has been delivered for the past few years: but with the exception of these two courses, this important branch of medicine does not seem to have been studied at any seat of learning. Dalhousie University is, therefore, to be congratulated on having been the pioneer in dealing with this valuable addition to the medical curriculum.

Manitoba University.

AT a meeting of the University Council on April 7th, it was finally decided that in view of the demand for medical men both for the military service and to minister to the needs of the civil population, students who in the regular course of affairs would graduate in 1917 would be given a summer course and would receive their degrees in the autumn of this year.

ARMY MEDICAL SERVICES

MAJOR W. E. NELSON, M.D., C.A.M.C., of Westmount, Quebec, D.A.D.M.S. at Montreal, and later at Ottawa, has gone overseas and will be attached to the staff of one of the hospitals in France.

THE Croix de Guerre has been awarded to Captain G. H. R. Gibson, C.A.M.C., and to Captain J. A. Cullum, C.A.M.C., of Regina, medical officer of the 28th Battalion, who was mentioned in despatches some months ago for conspicuous bravery in attending to the wounded under heavy fire.

THE following lieutenants of the C.A.M.C. have been appointed temporary lieutenants of the R.A.M.C.: D. E. H. Cleveland, M.D., J. B. Galligan, M.B., F. H. Hurlburt, M.B., E. C. Smith, J. G. Lee, M.B., T. A. McKenzie, M.B., M. D. Baker, M.B., D. T. Evans, M.B., G. A. Lamont, M.B. R. P. Smith, M.B. and W. M. McLaren, M.B., have been appointed lieutenants of the Royal Army Medical Corps.

THE following promotions in the C.A.M.C. are announced: To be temporary lieutenant-colonels: J. E. Davey, P. G. Goldsmith. To be temporary majors: T. H. Macdonald, Major D. S. Mackay, from 27th Canadian Infantry Battalion; Captains S. A. Smith, D.S.O., C. K. Russel, G. B. Peat, L. W. MacNutt, J. G. Hunt, A. S. Donaldson, H. L. Jackes. To be temporary captains: M. A. Griffith, A. H. Hough, H. Bell, F. B. Day, R. N. W. Shillington, T. R. C. Hays-Hicks, R. H. Thomas, M.D., R. D. Moyle, G. M. Ross, M.D., F. Harvey, A. H. Rolph, L. A. Le Boeuf, E. C. Beer, R. Brault, S. Traynor, G. Bouthelier. To be temporary lieutenant: J. F. Sparrow. To be temporary honorary lieutenants: T. A. Loughrey, A. W. Homes, C. W. Reynolds. To be lieutenant-colonel, Major Templeton.

DR. JAMES CLARKE, of Nelson, British Columbia, is gazetted captain in the C.A.M.C.

LIEUTENANT-COLONEL P. GOLDSMITH, C.A.M.C., recently returned to Toronto for a short time on leave. He has now gone back to England and is on duty as second-in-command at the Canadian Eye and Ear Hospital at Folkestone. Colonel Hanford McKee, C.A.M.C., of Montreal, is the commandant.

THE following have been appointed medical officers of overseas battalions: Captain J. J. Danby, of Richmond, Quebec, of the 207th Battalion; Captain A. W. Moody, of the Winnipeg Infantry Regiment, Reserve Militia, in succession to Captain Lineham, who

has joined the 183rd Overseas Battalion; Captain L. H. Coates, of Brantford, Ontario, of the 215th Battalion; Captain J. C. Wilson, of London, Ontario, who was formerly attached to No. 1 General Hospital, C.E.F., and who returned from the front recently, of the 142nd Battalion; Captain R. Gibson, of Moose Jaw, Saskatchewan, of the 128th Battalion in succession to Captain George Seaborn, resigned; Captain C. J. S. Little, of the Toronto Isolation Hospital, of the 220th Battalion; Captain J. F. Palling, of Barrie, Ontario, of the 177th Battalion; Captain Carmichael, of Strassburg, Saskatchewan, of the 96th Battalion; Captain Beeman, of Magrath, Alberta, of the Lethbridge Highlanders; Captain R. H. Parent, of Ottawa, of the 230th Battalion; Major Joseph A. McKee, of Seattle, of the 211th Battalion of the American Legion; Captain Archibald McMillan, of Winnipeg, of the 212th Battalion of the American Legion. Lieutenant W.D. Brace, of Saskatoon, of the 203rd Battalion; Captain C. F. Atkinson, of Edmonton, of the 202nd Battalion; Lieutenant J. P. Brennan, of Montreal, of the 199th Irish Canadian Rangers; Captain Meek, of Regina, of the 68th Battalion; Captain C. A. Temple, of Toronto, of the 8th Artillery Brigade.

THE following have joined the Royal Army Medical Corps: Dr. Charles Trow, of Shakespeare, Ontario; Dr. E. B. Moles, of Brockville, Ontario; Dr. R. Stripe, of Watrous, Saskatchewan.

LIEUTENANT-COLONEL D. S. MACKAY, C.A.M.C., has been appointed commanding officer of the 196th Battalion.

CAPTAIN T. B. EDMISON, C.A.M.C., of Hastings, Ontario, is attached to the Ramsgate Military Hospital, Ramsgate, England.

DR. DAVID DONALD, of Victoria, British Columbia, has returned from the front and is now attached to Canadian Headquarters, London.

DR. EDNA GUEST, of Toronto, has been appointed to the staff of the Northamptonshire War Hospital, England. Dr. Guest was on her way to Canada from India, where she has been engaged in medical missionary work for the past two or three years.

DR. ALLAN KINGHORN, who graduated from the University of Toronto in 1904, has been appointed senior medical officer with the British Forces at Abercom, Rhodesia.

THE appointment is announced of Dr. Alfred Thompson, M.P., for the Yukon, as superintendent of the Convalescent Hospitals established by the Military Hospitals Commission. Dr. Thompson is gazetted lieutenant-colonel.

CASUALTIES

Died

LANCE-CORPORAL ROBERT GORDON CALDWELL STEWART, M.D., C.A.M.C., of Kingston, Ontario (15th Royal Highlanders). Died of wounds received at St. Julien.

MAJOR PAUL A. GILLESPIE, M.D., of the South African Army Medical Corps, formerly of Penetang, Ontario. Died of bubonic plague.

CAPTAIN WOOD, M.D., C.A.M.C. (Canadian Mounted Rifles). Died of wounds in France.

Wounded

MAJOR WALTER BAPTY, M.D., C.A.M.C., of Victoria, British Columbia (2nd Canadian Mounted Rifles).

LIEUTENANT THOMAS S. O'CONNOR, M.D., C.A.M.C., of Gananoque, Ontario.

LIEUTENANT FRANK A. HASSARD, M.D., R.A.M.C., of Toronto. Fracture of the metacarpal bone of the left hand.

Canadian Literature

ORIGINAL CONTRIBUTIONS

The Canadian Practitioner and Review, February, 1916:

County Associations	G. Stewart Cameron
Medical practice as a public service . .	J. Ferguson
The legal status of the medical profession in Ontario	H. S. Osler, K.C.
Medical legislation in Ontario . . .	H. B. Anderson
Medical fees	A. H. Wright

The Canadian Practitioner and Review, March, 1916:

Nephritis of infection (non-suppurative)	J. A. Oille.
The advantages and risks of combined local and general anæsthesia	W. H. B. Aikins.

Dominion Medical Monthly, March, 1916:

Rosacea pustulosa	G. Elliott.
A case of empysema following an acute appendicitis with operation	C. H. Hair.
A case of syphilitic periostitis	H. B. Baker.

The Canadian Journal of Medicine and Surgery, March, 1916:

Orthopædic surgery	C. L. Starr.
Medical conditions at the front	H. A. Bruce.
Physical therapeutics	C. R. Dickson.

The Canada Lancet, March, 1916:

County associations	C. Stewart Cameron.
The legal status of the medical profession in Ontario.	H. S. Osler, K.C.
Medical legislation in Ontario	H. B. Anderson.
Medical fees	A. H. Wright.

The Public Health Journal, March, 1916:

Rural sanitation	A. C. Jost.
Prevention of lobar pneumonia; Can anything be done?	M. Nicholl.
General management of lobar pneumonia	D. Bovaird.
Bacteriology and present status of specific treatment of pneumonia	R. Cole.
Medical inspection of rural schools	S. A. Fulton.
Some pressing problems of modern times	Sir Thos. Oliver.
The principle of the Gary plan and its application to New York	W. G. Wilcox.
The method of dealing with tuberculosis in the public schools of Toronto	F. S. Minns.
Disposal of refuse	J. McHardy.

Le Bulletin Médical de Québec, March, 1916:

Médication cardiaque	O. Leclerc.

Medical Societies

THE ONTARIO MEDICAL ASSOCIATION

THE following is the programme arranged for the Annual Meeting of the Ontario Medical Association, which takes place in the Medical Building, Queen's Park, Toronto, on May 31st, June 1st, and 2nd.

Wednesday, May 31st.

9.00 a.m.—Registration.

10.00 a.m.—Business Session.

12.00 a.m.—An Organ Recital—Convocation Hall.

2.00 p.m.—General Session.

"Drugs and medicinal agents considered from the professional, economic and national standpoints," by Professor A. D. Blackader, Montreal.

Address in Gynæcology, by Dr. J. F. Percy, Galesburg, Ill. Subject: "Heat problems, or the method of treatment in cases of inoperable uterine carcinoma."

"Tonsillectomy, with its general results," by Dr. Justus Matthews, Mayo clinic, Rochester, Minn.

Election of the Nominating Committee.

In the evening at eight: President's Address, by Dr. H. B. Anderson.

8.45 p.m.—The Address in Medicine, by Dr. Elliott P. Joslin, Boston. Subject: "The treatment of diabetes."

On Thursday, June 1st, from nine to twelve o'clock, the Sections in Medicine, Surgery, Obstetrics, and Ear, Eye, Nose and Throat will meet.

Programme in Medicine:

"Pernicious anemia," by Dr. Charles McKay, Seaforth.

"Radium as an auxiliary in the treatment of exophthalmic goitre," Dr. by W. H. B. Aikins, Toronto.

"Indications for and results of artificial pneumothorax in phthisis," by Dr. C. D. Parfitt, Gravenhurst.

"Duodenal feeding with tube," by Dr. Cleaver, New York.

"Treatment of constipation," by Dr. Campbell, Napanee.

"Treatment of lues in children," by Dr. George Smith, Toronto.

"Arterial hypertension," by Dr. Boyce, Kingston.

"Wassermann reaction in relation to diagnosis and treatment of syphilis," by Dr. Hugh Laidlaw, Kingston.

"Protozoan infections," by Dr. L. G. Pearce, Brantford.

"Syphilis with new arsenical preparations," by Dr. Gordon Bates, Toronto.

Programme in Surgery:

"Appendicitis," by Dr. M. O. Klotz, Ottawa.

"Gall-stones," by Dr. I. Olmstead, Hamilton.

"Pyloric stenosis in infants," by Dr. W. E. Gallie, Toronto.

"Fractures, including compound," by Dr. Seaborn, London, and Dr. J. M. Rogers, Ingersoll. Discussion opened by Dr. T. H. Middleboro, Owen Sound.

"Intestinal obstruction," by Dr. H. A. Bruce, Toronto.

"Renal calculi," by Dr. W. W. Jones, Toronto.

"Conservative surgery in injuries of the hand," by Dr. N. A. Powell, Toronto.

"Transfusion," by Dr. F. N. G. Starr, Toronto.

"Perforating ulcer of the stomach," by Dr. McGregor, Hamilton.

"Treatment of cancer by fulguration," by Dr. J. E. Hett, Berlin.

"The relative merits of the steel plate and bone graft in the treatment of recent fractures," by Dr. E. R. Secord, Brantford.

"Pulmonary abscess following abdominal operations," by Dr. Angus McLean, Detroit.

"Duodenal ulcer," by Dr. A. H. Perfect, Toronto.

Programme in Gynæcology and Obstetrics:

"Treatment of dysmenorrhea," by Prof. William Weir, Cleveland.

"Morphine and hyoscine in obstetrics," by Dr. A. Kinnear, Toronto.

"Blood transfusion in hæmorrhage of the new-born," by Dr. Alan Brown, Toronto.

"Gelatine in hæmorrhage of the new-born," by Dr. McIlwraith, Toronto.

"Apparatus used in blood transfusion," by Dr. Unger, New York.

"The female pelvic floor and the part it plays in obstetrics and gynæcology," with moving pictures, by Professor T. H. Morgan, New York.

"Eclampsia," by Dr. J. F. Goodchild, Toronto.

"Diagnosis and choice of operations in retrodisplacements," by Dr. A. C. Hendrick, Toronto.

"Persistent occipito-posterior positions in relation to the country practitioner," by Dr. Charles Age, Oakville.

"The Walcher position in obstetrics," by Dr. Arthurs, Sudbury.

Programme in Section of Ear, Eye, Nose and Throat:

"Foreign bodies in the œsophagus," with slides, by Dr. Edmund Boyd, Toronto.

"Treatment of the blind after the war," by Dr. B. C. Bell, Brantford.

"Orthodontia in its relation to the nose and throat," by Dr. G. W. Grieve, D.D.S.

"Nose, throat and accessory sinuses in relation to systemic diseases," by Dr. D. J. Gibb Wishart, Toronto.

Thursday afternoon: Address in Surgery by Professor Dean Lewis, Chicago.

"Treatment of Pneumonia," by Professor Solomon Solis Cohen, Philadelphia.

Business Meeting.

In the evening Dr. Weston A. Price, D.D.S., D.S.C., M.E., Cleveland, will give an address on "Mouth infections and some of the mechanisms by which they produce localized and systemic diseases."

Professor John Wyeth, Professor John A. Bodine, and Professor C. H. Chetwood will illustrate some operations by moving pictures.

On Friday afternoon there will be a Military Section in which subjects of interest to the Army Medical Corps will be discussed.

On Friday evening Professor Stephen Leacock will give an address.

THE MEDICINE HAT MEDICAL SOCIETY

THE annual meeting of the Medicine Hat Medical Society took place on March 1st, when the following officers were elected: president, Dr. W. H. Macdonald; vice-president, Dr. E. C. Smyth; secretary-treasurer, Dr. J. S. Macleod.

TORONTO ACADEMY OF MEDICINE

THE stated meeting of the Academy was held in the Mining Building of the University of Toronto on April 4th, at 8.30 o'clock. Dr. R. G. Snyder of New York addressed the Fellows upon the subject, "Recent ideas as to the classification and treatment of nephritis," illustrated by lantern slides.

CLASSIFICATION OF THE NEPHRITIDES:

a. Nephrosis
   1. Simple,
   2. Special forms—(a) corrosive sublimate, (b) amyloid kidney, (c) eclamptic;
b. Focal Nephritis
   1. Focal Glomerulonephritis,
   2. Focal Intestitial Nephritis,
   3. Embolic Nephritis;
c. Diffuse Glomerular Nephritis—acute and chronic;
d. Cases of Simple Hypertension;
e. Arterio-Sclerotic Kidneys;
f. Stasis Kidneys.

Nephrosis is rare—only one case in one and one half years. Only outstanding symptom of this case was œdema, no other signs of nephritis, gradual progressive onset of oedema, intake of fluids 40 oz., output 30 oz., albumen ± ++ casts +++, S. G. 1026 to 1040, systolic blood pressure 90 to 110, filtrate N. 24 mg. per 100 cc. blood, no cardiac hypertrophy, marked salt retention, no uræmic symptoms in nine months' observation, skin pale but no anæmia.

Section of kidney shows degeneration of convoluted tubules without blocking of tubules. This is claimed to be a toxic manifestation.

A section of kidney showing changes due to bichloride poisoning was shown. When discussing this, reference was made to recent successful treatment of bichloride poisoning; wash stomach twice daily, use Murphy drip with colon irrigation twice a day, also force intake of fluid. The poison is absorbed and reëxcreted into stomach and intestine.

The focal nephritides include those associated with bacterial infections, those of endocarditis in which the streptococcus viridans is recovered are typical.

In these cases when S.G. falls to 1020 or remains fixed the prog-

nosis is bad, rarely living over two years and usually six months to one year.

One of the earlier symptoms of nephritis is an increase of the night urine—a nocturial polyuria—the normal amount is about 400 cc.

Although in all nephritides there is nitrogen retention there is also some retention of salt—the headaches are usually relieved by lessening the salt in the food.

Observation of the specific gravity of urine in cases of hypertension is of value. A series of eight cases showed S.G's from 1004 to 1012. All such cases leave a nephritis if one can exclude a polyuria from normal causes, such as, increased intake, excreting œdema, nervousness, etc.

Reference was made to certain cases studied which contradicted the statement that albuminuric retinitis was due to retention of nitrogen.

Increased retention of filtrate nitrogen causes symptoms of anæmia in a large majority of cases, especially if retention is due to a glomerular nephritis, but it is probable that there is another substance which investigators are now working at which is the real cause of uræmia.

Those cases of pneumonia which show a high nitrogen retention almost invariably have a bad prognosis.

Cardiac cases of œdema do well on the Karell diet which limits the salt intake. It is one quart milk a day using infusion digitalis half an ounce every four hours.

The hypertension cases which show high systolic and high diastolic pressures which vary and which retain ability to concentrate the urine—that is, which show variable S.G.'s, with low nitrogen retention, show a tendency to cerebral hæmorrhage and rarely die of nephritis.

The use of the ophthalmoscope is important, in that those cases which show retinal hæmorrhage very frequently develope cerebral hæmorrhage.

CHART SHOWING PROGNOSIS IN:

1. Cases of simple hypertension (high blood pressure and ability to concentrate urine 1008 to 1036), 42 cases;

23 left improved,
12 per cent. cerebral hæmorrhage,
9 died of cerebral hæmorrhage,
2 cardiac failure,

5 still living with hæmophilia.

2. Nephritis (high blood pressure with inability to concentrate, S.G. 1002 to 1018), 40 cases;

14 left hospital usually in bad condition,

60 per cent. died in hospital, diagnosis confirmed at autopsy,

2 still alive.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

THE ninth regular meeting of the Society was held Friday evening, February 4th, 1916, Dr. W. S. Morrow, in the chair.

PATHOLOGICAL SPECIMENS: Series by Dr. Horst Oertel.

1. Cirrhosis of the liver in an infant of four months.

2. Lymphangitis and perilymphangitis accompanying pneumonia.

1. The specimens of the first case present a lesion which is considered rather rare in children and infants, namely, a cirrhosis of the liver. They were removed from a female four months old who had been in hospital for some time with a rather indefinite history and progressive jaundice. Autopsy disclosed very characteristic cirrhotic lesions of the liver with intense jaundice, and a spleen with very marked enlargement. The fresh sections which were immediately made showed that the lesion, like most of these more rapidly progressing infantile cirrhoses, consisted essentially of a marked parenchymatous degeneration of the liver cells with fat infiltration and degeneration and bile imbibition also hyperplasia of liver cells, accompanied by a very active interstitial tissue proliferation which is very similar to that which is observed in the more acute cirrhosis of the liver in adults. The cellular connective tissue takes its origin from the interlobular septa and rapidly advances, surrounding parts of the liver tissue in peri-insular fashion, but also more or less diffusely invading the liver lobules. The lesion is therefore quite characteristic of what is usually termed a subacute cirrhoses of the liver or, by some, a subacute atrophy of the liver as it stands clinically and anatomically intermediate between the ordinary cirrhoses of the liver and the acute yellow atrophy. These cases show in children, as well as in adults, all sorts of gradations between the more chronic types which advance more slowly with, relatively, good preservation of the liver cells and the more acute forms associated with marked degeneration of the liver cells themselves and active cellular and, usually diffuse,

proliferation of connective tissue. There also existed in this instance ascites of a moderate amount of serous fluid. The spleen was large, as mentioned, fleshy, firm, very much as one finds it in cirrhoses in adults and it consists, like the splenic enlargement in all true cirrhoses, of a diffuse hyperplasia of pulp and of fibrous tissue. Cirrhosis of the liver is looked upon by many as a disease peculiar to adults; as a matter of fact it is not exclusively so, a number of cases occurring in infants and most of these are rather rapid in course, much more so than in adults, and therefore generally associated with progressive jaundice. Dr. Milne collected at one time a number of these cases of subacute cirrhosis and he found that a considerable number occurred in infants and very young children. The cause of it is not known; like all cirrhoses it is apparently of portal infection, the inflamatory cell exudate is primarily around the portal veins and from these extends into the liver tissue. The jaundice is caused by the active destructiion of the liver cells as well as by the diffuse lobular infiltration of connective tissue which grows, at least partly, diffusely into the lobules.

2. This second specimen is by no means a rarity, but illustrates a lesion which I think is not sufficiently appreciated and which for this reason I would like to exhibit. It comes from an old woman who had been ill with pneumonia from which she died. At autopsy was found pneumonic consolidation of the left upper lobe, but the upper part of the upper lobe had been transformed into an abscess, evidently as result of senile emphysema and obliteration of resorbing lymphatic vessels. Even the gross sections show easily visible grayish streaks between groups of consolidated alveoli: lymphangitis and perilymphangitis of the interalveolar lung tissue. In other words the exudate is not only poured into the alveoli but into the interstitial interveolar and peribronchial tissue. This leads to an obliteration of capillaries and particularly of lymphatics. The resorption of the pneumonic exudate from the alveoli depends entirely upon the condition of the interalveolar lymphatics. If resolution is to take place and the exudate to be absorbed, then it is primarily requisite to have softening and clearing of the interalveolar lymphatics; if this does not occur it will lead to necrosis and produce by fusion an abscess or it will become organized by growth into the alveoli gradually organizing the exudate. For these reasons pneumonia in emphysematous lungs, be it senile or acquired, is serious and they are particularly prone not to undergo normal or physiological resolution because in the emphysematous lung large areas of interalveolar septa have already

become obliterated and are entirely lacking for resorption of the exudate; the same is true where clearing of the lymphatics has not taken place. Although these conditions are common it is I think not fully appreciated in what importance and relation they stand to the pneumonic process itself and to its good or bad termination.

Dr. Horst Oertel: With regard to the pathology of pernicious anæmia, and more especially that remarkable hypothesis of Schneider's, based on the fact that a good many cases of pernicious anæmia show marked thickening of the massive splenic artery and smaller arteries in the spleen, this is not characteristic of pernicious anæmia; it is extremely frequently found in the spleen and occurs very regularly in spleens of all people over forty. The spleen is an extremely vascular organ exposed constantly to variations in size and also in blood pressure. The splenic arteries even under normal conditions are more exposed to such variation than any other vessel, consequently they undergo hyaline thickening extremely frequently; one might almost say that it is really physiological for the spleen to show hyaline changes and thickening in the blood vessels and its smooth musculature, after forty years. As far as I am concerned I am unable to bring the spleen into any direct relation to pernicious anæmia at all. It is surprising to see so often how little the spleen shows in pernicious anæmia, much less than in severe secondary anæmias. This is also stated by Schridde, who has had much experience, and who says also that the spleen in pernicious anæmia does not show new blood formation. In our present state of knowledge it does not seem possible to bring the spleen into any essential causal relation to pernicious anæmia.

Case Reports: (1) Backache, by Dr. J. Appleton Nutter.

I brought together a few notes on backache, cases I have seen within the last few months and that have been intensely interesting to me, thinking they might be equally so to you. The first one comes, I think, under the heading of static backache, by which is meant backache the result of an improper standing position. It concerns a young girl, a housemaid, rather plump and on her feet a good deal. She complained of pain in the lower part of the spine, also down the left leg. Sometimes the pain was referred to the front or anterior crural distribution of the thigh and sometimes posteriorly to the sciatic distribution, going down as far as the ankle. On examination, her antero-posterior poise was good, she had not a flat back or an exaggerated lordosis, neither round shoulders nor any lateral curve; her spinal movements were quite

free. There was no evidence of any vertebral rigidity or disease, the sacro-iliacs were normal and without increased mobility; knees negative, without crepitus, effusion or knocking. Examination of her hips was negative. Both feet, especially the left, showed well marked pronato-valgus. They were markedly everted, but without pain or tenderness, or rigidity. Further examination showed no evidence of any infective focus, i.e. tonsillitis, genito-urinary infection, chronic constipation, etc., so I put her down as a case of static backache. Her treatment, which we are now carrying out, consists largely of a flannel spica around the left hip and pelvis to give her a certain amount of compression as well as fixity in her back and hip, together with the use of foot plates, massage and rest. Her backache was of a chronic aspect, had in fact lasted for months, and examination was negative save for the presence of well marked flat feet. She is now on the way to a complete recovery and I thnik you will agree with me that her feet had something to do with her backache.

The second case is a post-partum patient. A young woman from the country entered the Montreal Maternity Hospital to be confined. She had been strong and healthy. She had a moderately severe delivery several weeks after which she could not stand or walk. If she made the effort she suffered intense pain in the back. Note that in her case weakness and inability to walk or even stand were the principal complaints, pain ca ne next. Examination showed tenderness in the left groin, suggestive of phlebitis; the right leg was weak as she lay in bed but otherwise there was no gross paralysis Both legs could be moved voluntarily. She had to be examined in bed and no x-ray was possible. I noted that her feet were badly pronated. Her pelvic ring seemed relaxed; one side seemed to move on the other and I thought I could detect undue mobility, not only at the sacro-iliac joints but at the symphysis. There was no sacro-iliac tenderness. I dared not try to move her about because of this threatened phlebitis, but I put a double flannel spica very tightly around her pelvis and kept her quiet. Once the subsidence of the phlebitis allowed it she was able to get on her feet and gradually walked more and more until in two weeks she was able to go back to her family. I had her corset laced tightly and very low. I considered this a distinct and unusual case of post-partum sacro-iliac relaxation. During pregnancy the ligaments of the pelvis were softened up and during parturition there was a forcing apart of the pelvic ring which left her in a very deplorable condition. Fortunately it yielded to treatment.

In the third case the nervous element plays a most important part. A young girl, overworker, a great lover of bridge, has had backache off and on for something like sixteen years; she is at present doing far too much housework, does not sleep well, is always nervous especially so of late. Constipation is present and is habitual. A bismuth meal shows marked stasis in the colon with marked enteroptosis. Backache is in the lower lumbar region, at times worse when she is unwell. Examination shows flexible spine and vertebral ligaments, tendency to slight lateral curve but not of an extent to give the backache of which she complains. Pains in her heels radiate up the back of her legs as she stands. The antero-posterior curve is good but she has rather a prominent abdomen, which of course as you know has a tendency to drag upon the muscles of the small of the back (this prominence of the abdomen, by the way, may contribute to, if not be the principal cause of a well marked backache). The musculature of the spine is quite weak. Gynæcological examination shows retroposition of the uterus but no prolapse. She was ordered foot plates, to get some one to do the housework, a tonic, a corset made to support the abdomen, as well as the spine, and above all massage of the back. She is improving and is getting treated also for her constipation and should she not recover soon I shall suspect uterine adhesions.

The fourth case shows the gynæcological element more important than the orthopœdic, though I did not find this out until orthopœdic treatment by itself had failed. She was a young married woman, previously healthy, though not given to physical culture, who complained of pain in the side and back dating from confinement, at times associated with vomiting. A very small amount of housework would being on the backache, at times pain even came on at night. Examination showed a weakly muscled young woman with absolutely no tone to her muscles, no scoliosis, spinal movements good no vertebral nor muscular tenderness, feet very flat. The attending obstetrician stated that when she left his care a few months before the uterus was in normal position, so I asked for no further examination. She had no symptoms of any intra-abdominal condition, no sacro-iliac tenderness and in fact her backache seemed due to weak, irritable and overstrained muscles. Rest, gradually increasing exercises, massage and foot plates gave much relief, and I was congratulating myself that I had accomplished a cure in a difficult case. There was practically no pain for a month or two, and on the strength of this the patient went on a visit to a distant city and had not any more than got

there when she had a very severe attack. This led to an examination by a gynæcologist, who discovered that she had prolapse and ordered the usual gynæcological treatment and rest. This has completed the cure so that now, although one could not call her a robust woman, still, she has no more spasms of pain and very little backache if any. This illustrates the gynæcological element in backache though I feel sure her weak muscles were a contributory cause.

In these four cases I have thus shown you an illustration of, (1) the mechanical element as causative agent in backache, (2) weakness and pain in the back the result of pelvic relaxation after childbirth, (3) backache in association with neurasthenia, the most difficult thing a doctor is called upon to treat, (4) backache with both gynæcological and orthopedic factors of origin, where orthopedic treatment had to be supplemented by gynæcological measures to obtain a cure.

DISCUSSION: Dr. Viner: I would like to ask how far up was the backache and if the backache of this gynæcological case was distinctive.

Dr. Nutter: It is pretty hard to state definitely the extent of the "ache", it usually radiated up practically to the lowest ribs. In the case with a gynæcological factor the pain was in the lumbar region, particularly in the lumbo-sacral region. Backaches of pelvic origin are usually, but by no means invariably, increased during the menstrual p›riod. I always remember Dr. Chipman's dictum that mere variation in the position of the uterus, such as retroposition, does not cause pain if there be no descent of the uterus. A uterus fixed by adhesions may, however, cause pain.

2. Diarrhœa due to amœba coli, and

3. Abscess of the liver, by Dr. A. H. Gordon.

(These two case reports appear on pages 426-428 of this number of the JOURNAL.)

PAPER: The paper of the evening was delivered by Dr. J. Kaufmann, being an analytical study of cases of pernicious anæmia.

DISCUSSION: Dr. C. F. Martin: I would like to say a few words about Dr. Kaufmann's paper because we have been following for a good many years back all cases of pernicious anæmia with a good deal of interest. We have been much puzzled to know what really should be called pernicious anæmia, so many cases diagnosed as such come into our wards and yet these patients get well and we have dismissed the diagnosis, and rightly so. They must have had some peripheral stasis or peripheral hæmorrhage and then a

very great anæmia very much like the pernicious type. These patients do very well on the ordinary methods of treating the so-called secondary anæmias. But after all pernicious anæmia is a secondary anæmia, either toxic, bacterial or septic; Dr. Kaufmann speaks of it as a febrile disease. There are two types: the Addisonian variety in which there is a little fever and later on a great deal when a secondary infection has occurred. Then there is the other type, arising from sepsis of all kinds, e.g. infected teeth, in which the high fever is rather characteristic. A word about the diarrhœa. It seems to me I can recall some in which the diarrhœa meant the beginning of the end and I do not find that is a salutary event; the cases I recall are cases which have certainly not done well. In one or two instances nitro-muriatic acid had not improved the diarrhœa but it is remarkable how well some patients do on this. With regard to treatment, so many different men record success with as many different treatments that we are not in a position to say that there is this or that which is the best, certainly not between transfusion and splenectomy. But certainly the recent work that has been done does tend to show marvellous results with these last two. In one case in Dr. Hutchinson's clinic the patient has regained normal vigor, without any doubt of the condition being pernicious anæmia, after splenectomy and transfusion. Then Dr. Lafleur some time ago gave us a list of cases treated by 606 in which the patients did very well up to a certain limit, but here the blood count did not go up very much but the patient's subjective symptoms were improved. There is a tendency to abandon this in favour of transfusion and splenectomy. I saw one of my pernicious anæmia patients a few days ago whose blood was now so good after many months as to be apparently quite normal. He had been treated with nitro-muriatic acid which he had been keeping up on 10 mm. doses three times a day after meals; he had had no transfusion, splenectomy or anything else. In this, one must be careful in being assured that one method of treatment has any more value than another.

Dr. J. Kaufmann: I hope I have not left the impression that we have in splenectomy and transfusion anything more than a hope, because so far the number of cases in which it has been done and the results, do not lead us to any conclusion other than that it might be of some use. It does seem that the enthusiasm which excites most of the men who have carried out the treatment under their observation would indicate that it is worth while in cases that are not otherwise doing well and going down hill, and not to be influenced by the fact that remissions come in.

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